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IN THE

Supreme Court of the United States

OCTOBER TERM, 1906

No. 5. ORIGINAL. CAUSE IN EQUITY

No. 1 Orig
O. T. 1907

THE STATE OF GEORGIA, BY ITS ATTORNEY GENERAL, JOHN C. HART, *Plaintiff*

vs.

THE TENNESSEE COPPER COMPANY, AND THE DUCKTOWN SULPHUR, COPPER & IRON COMPANY, LIMITED, *Defendants*

Brief and Argument of the Defendant Tennessee Copper Company on Final Hearing

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Of Counsel

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JOHN H. FRANTZ,
JAMES B. WRIGHT,
Solicitors for Tennessee Copper Company

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OCTOBER TERM, 1906.

No. 5. ORIGINAL CAUSE IN EQUITY.

THE STATE OF GEORGIA, by its Attorney-General, JOHN C. HART,
Plaintiff,

AGAINST

THE TENNESSEE COPPER COMPANY and THE DUCKTOWN SULPHUR, COPPER AND IRON COMPANY (Limited),
Defendants.

BRIEF AND ARGUMENT OF THE DEFENDANT TENNESSEE COPPER COMPANY.

MAY IT PLEASE YOUR HONORS:

Statement.

The controversy in this cause arises out of the operations by the defendants Tennessee Copper Company and Ducktown Sulphur, Copper and Iron Company, Limited, of their copper properties located and operated in the State of Tennessee at a point within a few miles of the State line between Georgia and Tennessee. The ores treated by these

defendants are mono sulphide copper ores containtaining about thirty per cent. of sulphur.

The contention of the State of Georgia is that in their treatment the sulphur contents are emitted from the smelter plants of the defendants, and that the gases and fumes liberated by the smelting of these ores being driven by the winds are carried across the State line between the States of Georgia and Tennessee into and over that part of the territory of the State of Georgia adjacent to the copper operations. The plaintiff further contends that there is injury by the fumes and gases to the public highways and roads, and to the streams, and that tax incomes are reduced, and that hence plaintiff is directly injured, and also that the health and private property of its citizens is being injured, and that on account of the alleged injury to health and property of citizens it has the right to institute this suit as *parens patriæ*, trustee and guardian for them.

The contention of the defendants is that the State of Georgia has no direct interest in this litigation; that the public roads are not injured; that the streams are not injured; and that State revenues are not injuriously affected and that the right of taxation is not a property right. They also insist that the property of citizens is not injured, and that the health of the citizens is neither injured nor impaired. Defendants also insist that Georgia has no right to institute this suit becaue of the fact that the suit is really filed by it on behalf of certain of its citizens who have the courts of both law and equity open to them, so that they may sue in their own behalf if they have suffered any injuries. The defendants also insist that there is an adequate remedy at law for any injury alleged, and further, that the State of Georgia is estopped in this action on account of its laches and acquiescence in the operations complained of; and, further, that in balancing the equities of the case the Court will not grant the injunctive relief prayed, because that relief, if granted, would work more harm to these defend-

ants and the community than would the refusal of the injunction. Defendants further contend that under neither the pleadings nor the proof has plaintiff made out its case.

The Pleadings.

The allegation of the bill, broadly stated, is that the State of Georgia as a sovereign State guarantees under its constitution and bill of rights to each and every of its citizens and inhabitants impartial and complete protection to persons and property (Bill, par. 3d); that the State of Georgia is the original and ultimate proprietor and owner of all lands within its jurisdiction, including those in the Counties of Murray, Gilmer, Fannin, Union and Towns (Bill, par. 2d); that by means of and through their furnaces, smelters and appliances, defendants are generating and causing to be discharged over the territory of the State of Georgia, and particularly upon the lands and its roads and highways within the counties of Murray, Gilmer, Fannin, Union and Towns, vast quantities of smoke, sulphur fumes and noxious and poisonous gases, thereby causing and creating both a public and private nuisance and depriving the State of Georgia and its citizens and inhabitants of sunlight and pure air (Bill, par. 5th).

The prayer of the bill is:

1. For process;

2. That a temporary injunction and restraining order be granted, prohibiting the defendant Tennessee Copper Company from in any wise operating, firing or using its four furnaces newly erected, or in course of erection, and that upon the final hearing said preliminary injunction be made perpetual; and

3. For a perpetual injunction against each and both of the defendants, commanding them to abso-

lutely desist and refrain from using, managing, maintaining, or in any manner operating, any furnaces or other appliances giving off or discharging any foul or dense smoke or injurious gases upon the territory or lands of plaintiff and its citizens (Bill, par. 27).

Demurrers.

Both the defendant Tennessee Copper Company and the defendant Ducktown Sulphur, Copper and Iron Company (Limited) demurred to the bill. The grounds of demurrer of defendant Tennessee Copper Company may be stated briefly as follows:

(1.) *Jurisdiction.*

That this Court has no jurisdiction of the cause because it appears that the State of Georgia is seeking to maintain this suit solely on behalf of and to redress the supposed wrongs of certain of her citizens, who have full, adequate and complete remedy in themselves.

(2.) *Merits.*

That the bill shows no such state of fact as to entitle plaintiff to the equitable relief sought (see Demurrer of Tennessee Copper Co., filed Nov. 27, 1905).

A motion was made by plaintiff for preliminary restraining order. Affidavits were taken by all parties on that question and the motion for preliminary restraining order and the demurrers of the defendants were argued on the same day. The demurrers were overruled by the Court without prejudice to any question and leave granted to answer. The parties were ruled to come to issue, the cause was set down for final hearing on February 25, 1907, and the restraining order in the meantime was denied.

The Answers.

Each of the defendants has answered the bill. *The answer of each of the defendants denies in detail every material allegation of the bill.* The answer of the defendant Tennessee Copper Company may be briefly stated as follows:

The answer denies that Georgia is being injured in any sense whatever by the operations of the defendant companies. It denies that there has been or is being done any injury to roads or streams within Georgia territory; denies that there has been any reduction of tax income or that its revenues are injuriously affected; denies that the health of citizens of Georgia has been or is being injured or impaired, and denies that the private property of private citizens has been or is being injured. The answer sets up the fact that it is not true, as stated in the bill, that in the use of their furnaces, smelters and appliances the defendants generate and discharge upon the territory of the plaintiff and over the counties of Murray, Gilmer, Fannin, Union and Towns vast quantities of smoke, sulphur fumes and noxious and poisonous vapors and gases, thereby causing either a public or a private nuisance, or depriving the State of Georgia or its citizens and inhabitants of sunlight and pure air, and further, that it generates at its plant no noxious and poisonous vapors, fumes or gases whatever, and the small amount of smoke and gases necessarily arising from the operation of the aforesaid plants, after having had extracted all harmful dust is discharged into the atmosphere at a very high altitude, and such of it as passes into the air currents over the territory of plaintiff, reaches it in a diluted state, and does not in any way interfere with the pure air or sunlight thereof, and that it creates neither impure, unwholesome or unpleasant atmospheric conditions (Ans., par. 5 and par. 27).

The answer of Tennessee Copper Company, after denying every material allegation of the bill,

sets out the history of copper operations in the Ducktown basin and shows that copper was discovered in said district about the year 1849; that operations have there been continued since 1849 until the present time with the exception of an intermission between the years 1879 and 1891; that during all these years of operations both the defendants have been continuously mining and smelting copper ore and manufacturing copper therefrom; that during the operations prior to 1879 the entire vegetation was denuded for many miles in every direction from the copper operations by reason of the cutting of the timber by the inhabitants and its being burned into charcoal for smelting purposes; that the former method used was that of first roasting the ores in open heaps on the ground; that in 1903, upon the insistence of the plaintiff, the open heap method was abandoned; that the present methods are the result of the insistence of the plaintiff that the open heap methods be abandoned; that there is being no injury done and that there are no complaints from the citizens of the State of Georgia (Ans., Par. 27th).

That during all these years, while this respondent has been carrying on said mining operations in said community, it has been encouraged thereto by the plaintiff and her citizens and has expended millions of dollars in the development of its said properties and the erection of its said furnaces and reduction works, and has converted what was formerly almost a desert containing in said entire Ducktown basin in the year 1890 only 222 men women and children, into a thriving, happy and prosperous community of from fifteen to twenty thousand inhabitants, almost totally dependent upon respondent and its co-defendant for their means of livelihood. And further "that it is using the latest, most improved and scientific methods in the treatment and smelting of its ores. That there is no known process of treating, smelting and reducing the same better adapted to said purpose than that now in use by

respondent, and none better calculated to prevent injury and damage to vegetation in the surrounding community; that even if any damage is being done to plaintiff and her citizens, which is denied, that it is inconsiderable and susceptible of the most accurate approximation. On the other hand, that to close down the operations of its plants at the suit of the plaintiff herein, would cause great and irreparable damage, not only to it, but to the entire community dependent upon it. These respondents employ at their said works some three thousand men with an annual payroll of nearly one million dollars. The granting of an injunction herein would have the effect of totally destroying the large investment of several million dollars which have been made in said enterprise, the complete destruction of the towns of Hiwassee, Isabella and McKays, whose population are almost solely dependent upon the continued operation of these works, and in a very large loss to the entire surrounding community including the territory of the plaintiff described in the bill. Respondent is advised that even if damage is being done by reason of the matter complained of that, inasmuch as it is being done by respondent and its co-defendant while developing its own property in a business, lawful in itself and beneficial, not only to the community, but to commerce, and inasmuch as the damage suffered by the citizens of plaintiff is small in comparison with that which would be done by the granting of the injunctive relief sought; that a court of equity will refuse said injunction and leave the parties to their relief at law " (Ans., Par. 29th).

And further " that this suit is brought by the plaintiff on behalf of a small portion of her citizens living in said counties adjacent to said copper works to right the supposed wrongs and correct the supposed grievances of said citizens and inhabitants and for that purpose and for that purpose alone; that the plaintiff has suffered and is suffering no damage whatever to any property or right by reason of the

matters complained of in the bill; that the allegations of damage to roads, streams and health and loss of revenue contained in said bill are wholly gratuitous and without foundation and respondent therefore says that the subject matter of this suit is not matter properly justiciable in this Court at the suit of the State, said citizens having not only full, adequate and complete remedy at law for their alleged grievances, but having the same remedy in equity which the plaintiff is assuming to exercise in their behalf" (Ans., Par. 28th).

In its answer the Tennessee Copper Company pleads the long continued laches and acquiescence of the plaintiff and her citizens as a complete bar and estoppel upon plaintiff both at law and in equity from now having the injunctive relief sought in this cause, and further that plaintiff is estopped from claiming the equitable relief now sought on behalf of her citizens on account of their acquiescence and participation in the creation, erection and maintenance of the operations complained of (Ans., Par. 27).

The Proof.

In the order made by this Honorable Court, setting this cause for final hearing on February 25, 1907, leave was granted to use the affidavits on file as proofs as counsel might be advised, and plaintiff and defendants have entered into a stipulation by which each has agreed not to take further testimony and to use the affidavits on file as final proof in this cause, reserving all other rights.

The proof in this record consists of various affidavits taken *ex parte* by the State of Georgia and by both of the defendant Copper Companies on the preliminary questions and filed in various volumes. A discussion of their character is hereinafter especially referred to. Those affidavits filed on the part of the State of Georgia consist of

(*a.*) One volume filed on October 23, 1905, as exhibits to the argument on application for leave to file and for restraining order.

(*b.*) One volume filed on April 23, 1906, as exhibits to the argument on application for restraining order.

(*c.*) One volume filed on October 1, 1906, as exhibits and supplemental evidence on application for restraining order.

The affidavits filed on behalf of the Tennessee Copper Company are as follows:

(*a.*) One volume filed on April 23, 1906, in support of argument of Tennessee Copper Company on application of plaintiff for preliminary restraining order.

(*b.*) The affidavit of J. Parke Channing, filed on April 24, 1906.

(*c.*) An album of photographs, filed October 1, 1906.

(*d.*) Volume One, filed October 1, 1906, of supplemental affidavits in support of argument of defendant Tennessee Copper Company on application of plaintiff for restraining order.

(*e.*) Volume Two, filed October 5, 1906, of supplemental affidavits filed by leave of Court in support of argument of defendant Tennessee Copper Company on application of plaintiff for restraining order.

The affidavits filed on behalf of Ducktown Sulphur, Copper and Iron Company, Limited, are as follows:

(*a.*) One volume of affidavits filed as exhibits to the answer of Ducktown Sulphur, Copper and Iron

Company to the rule to show cause why preliminary restraining order should not issue, said exhibits being filed on December 2, 1905.

The Bill, the Answer and the Proof

The record in its present shape makes difficult the orderly presentation of the proof on the various points raised by the pleadings, and in order to set out the proof on the material allegations of the bill and denials of the answer in an orderly way, we have taken the allegations of the bill as heretofore separated and rearranged and have rearranged the denials of the answer of this defendant to the particular allegations of the bill and under the same heading we refer to the proof of that particular question by reference to the volumes of affidavits according to the date of their filing, as follows:

First.—*The bill* alleges that the State of Georgia is the owner of all public highways and roads within the boundaries of the State (Bill, Par. 2d) and that the public highways and roads have been and are being injured and their usefulness impaired by the said fumes and gases. (Bill, Par. 11th).

The answer of this defendant denies that plaintiff has such direct property interest in the roads as would entitle her to maintain an action for alleged injury thereto (Ans., Par. 2d), and especially denies that there has been any injury to the roads and highways mentioned, or that by reason of any gases, vapors, smoke or fumes said roads have been rendered unhealthful, uncomfortable, undesirable, unpleasant or unsatisfactory for commerce or travel (Ans., Par. 11th).

PLAINTIFF'S PROOF:

In the volume of affidavits filed as exhibits on behalf of plaintiff on application for restraining order,

April 23, 1906, the affidavits of some of the witnesses state that by reason of the fact that some of the trees have died that they have fallen into the public roads, and that it has become necessary for the Road Commissioner to have these trees cut and removed from the public roads. As an example, the affidavit of D. R. Ballew in the volume before recited, page 86, states "that the timber destroyed as heretofore set forth often stands along the roadside and menaces the safety of and free passage over said roads, and it is necessary to have road hands or other persons continually watch for and cut out such dead and dying timber to keep the roads open and prevent injury to persons passing thereon."

We submit that the statements as made by this witness are true of any timbered mountainous country; it is true that timber is constantly falling along any country roads through any wooded country. This statement by Ballew is repeated by several other persons, notably W. R. Cole, page 112; A. B. Dickey, page 136; M. Farmer, page 143; John A. Fortner, page 148; F. M. Parker, page 161, who states "that it adds to the expense in the maintenance of said roads to cut the trees." Also W. S. Henson, page 167, states that as Road Commissioner he ordered the road-overseer to cut timber standing near the sides of the roads." L. V. King at page 183 states "that the roads are washed out in holes and gullies, more especially in the direction of Ducktown" This is also stated by R. L. Madaris at page 191, and by Bruce Mull at page 196, and also by G. D. Nixon, page 209, and it may be by other witnesses in the record.

By the most favorable construction of the affidavits of plaintiff's witnesses the alleged injury to roads resolves itself into the proposition that trees occasionally fall across the roadways and must be removed by the Road Commissioners and overseers, and that the roads in northern Georgia in the direction of Ducktown are washing in holes and

gullies. But by the strongest statements made by the plaintiff's affidavits on that subject there is no pretense that the roads are rendered unsafe, dangerous and inconvenient, and at no place have plaintiff's affidavits shown or even intimated that the highways are rendered unhealthful, uncomfortable, unpleasant, undesirable or unsatifactory for travel and commerce, as alleged in the bill.

DEFENDANT'S PROOF.

C. A. Schenck, in his affidavit at page 8 of Volume II. of affidavits filed by defendant Tennessee Copper Company, October 5, 1906, says:

> "The public roads in the Ducktown region are as good or as bad as any in the Southern Apalachians. It is not true that the roads of North Georgia are injuriously affected by erosion attributable to the action of sulphur smoke destructive of vegetation. The erosion of the roads is due to the steep grades of the roads, to the lack of drainage on the roads, and largely to the fact that fires destroy the dead vegetable cover on the ground, which would, if permitted to accumulate, change the rapidity of superficial drainage into slow percolation under ground."

Walter J. Mosenthal, at page 19 of the above volume, says:

> "In making all of the examinations, above mentioned, numerous trips were made over and along the public roads of North Georgia in the region alleged to be injuriously affected, and the condition of these roads was particularly noted by this affiant. The affiant, in his profession, has become acquainted with the mountain roads of Western North Carolina and of other parts of the Apalachian system. The roads of North Georgia compare favorably with the general mountain roads, and it is not true that the roads of North Georgia are injuriously affected by erosion claimed to be due to the action of the sulphur smoke in destroying vegetation. On the contrary, in

> this affiant's opinion, the erosion, which is no worse than in other mountain sections, is caused entirely by the destruction of the ground cover by fire, thus allowing water to run off rapidly on the surface of the ground instead of percolating slowly through the accumulation of humus."

Affidavits in support of argument of defendant Tennessee Copper Company on application of plaintiff for preliminary restraining order filed April 23d, 1906.

W. H. McKay, Road Commissioner for the Flint Hill District in the State of Georgia (p. 29, 30) states "that the public roads in the State of Georgia, and more particularly in the Flint Hill District, are not in any manner injured or interfered with by the operations of said copper industries, and that said roads are as good as other mountain roads in the northern part of the State of Georgia."

J. J. Wehunt, Road Commissioner for Mobile District in the State of Georgia makes the same statement (pp. 30, 31).

Joseph Hyde Pratt, acting State Geologist of North Carolina, Field Geologist United States Geological Survey, states that in those sections of Georgia, Tennessee and North Carolina the roads are not well constructed and drained and are now being constantly washed out and into gulleys because of improper construction. That this is true of other mountainous sections of these States and that the large amount of hauling over these roads, which are only repaired once or twice a year, keeps them in bad condition (p. 33).

M. J. Webb, Mayor of Ellijay, in Gilmer County, Ga., says: "That affiant states that said roads are as good as other similar mountainous districts where the roads receive the same relative amount of work. But affiant states that their condition is not so good as they could be made, because of the fact that the amount of work required by the laws of Georgia to be done upon said roads is not done" (p. 38).

And further, "affiant states of his own knowledge that the smoke and gases from the Ducktown copper operations have had absolutely nothing to do with the present condition of the roads, unless it be that the population having become more dense and the travel having increased, with a positive decrease in the work done in maintenance of roads, that their relative condition may not be quite so good as formerly" (p. 39).

T. S. McKinney, insurance agent, a former resident of Fannin County, Georgia, where he was in the newspaper business for ten years, states "that the roads throughout these counties are of the same general character as roads found in other mountain counties, being steep and hilly and never laid out nor maintained with the same degree of care as is given to roads of agricultural districts, where the country, being more level, will permit of good road maintenance, but affiant states of his own knowledge that the roads of Fannin and Gilmer Counties, Georgia, are as good as the roads in any of the other mountain counties of North Georgia or Eastern Tennessee, and that to affiant's personal knowledge the fumes from the copper operations at Ducktown have in no manner hindered, obstructed or interfered with the roads of Fannin and Gilmer Counties, Georgia, or the use thereof by the inhabitants of those counties. These roads are in as good condition as they ever have been during the twelve years of this affiant's acquaintance with the same" (pp. 43, 44).

To the same effect we refer to the following affidavits of 120 citizens (pp. 46, 49):

Affidavits 17 citizens, Gilmer County, Georgia (pp. 50, 51).

Affidavits 12 citizens of Towns County (pp. 52, 53).

Affidavits of 47 citizens of Union County (pp. 53–55).

Affidavits of 24 citizens of Murray County (pp. 55–56).

Affidavit of C. L. Hensley (pp. 58–60).

In the affidavits of G. C. Parks and M. T. Fouts (p. 73) these two affiants, after stating the fact that they made a general trip of inspection covering a large area of the mountainous country from Ducktown to Chattanooga on the Cumberland Plateau on Waldens Ridge, thence into Georgia and back to Ducktown, state with respect to the condition of the roads in the Ducktown District in Georgia that they noticed particularly the public roads which were found to be in as good or better condition than roads of similar mountainous sections at a distance wholly outside of the territory alleged or claimed to be injured. "The atmosphere was clean, pure and healthy. There was no discomfort on the public roads and there was no condition whatever of either discomfort or unhealthfulness to be observed" (p. 77).

To the same effect see affidavits of 296 miscellaneous residents of the Ducktown Mining Districts of Polk County, Tennessee, and Fannin County, Georgia (p. 82).

G. G. Hyatt, an attorney of that district, in his affidavit, page 93, says, "Affiant is acquainted with the physical conditions in the States of North Carolina, Tennessee and Georgia, adjacent to said copper operations, and has been so acquainted from his early childhood, and from affiant's own knowledge the injury alleged in the bill is grossly exaggerated. The public roads within the State of Georgia are neither injured, impaired, obstructed nor interfered with."

We also refer to affidavits of 108 miscellaneous residents of the Ducktown Mining District (p. 99).

Mr. J. L. Center states "that he has frequently traveled the roads in the northern part of Georgia, and to his knowledge said roads have not in any way been injured, interfered with or damaged by

the copper fumes and gases from said copper companies' plants, and that said roads are not impeded or rendered uncomfortable by said gases and fumes" (p. 104).

See, also, the following affidavits:

S. J. Spargo, J. H. Marchant, W. S. Maughan, all Justices of the Peace (p. 106).

W. I. Morris, United States Commissioner, and S. O. Welch, Deputy United States Marshal (p. 110).

H. E. Center (p. 113).

M. T. Dooley, Mayor of McKays, Ga. (p. 115).

Charles A. Weller, geologist and mining engineer (p. 135).

C. A. Schenck, forester (p. 172).

To the same effect see affidavit of W. H. Freeland, pages 23, 24 of the exhibits to the answer of Ducktown Sulphur, Copper and Iron Company, Limited, filed December 2, 1905.

It is submitted that the weight of the evidence on this question is in favor of the defendants. The statements made by the witnesses for the plaintiff with respect to injury to the roads and the conditions existing are statements which would be common to any public roads throughout any wooded country. It is specifically stated by witnesses for the defendants who are in as good position to judge the condition of the public roads as are the witnesses for the plaintiff, that the roads have not been in any manner obstructed, impaired nor interfered with, and that their safety and convenience has not been affected by the operations of the defendants so that it is apparent; that not only has the plaintiff failed to make out its case on this question, but by the actual weight of the proof, the defendants have preponderated.

Second.—*The bill* alleges that the fumes and gases injuring the vegetation has an indirect influence upon the precipitation and retention of mois-

ture to such an extent that the streams within the State of Georgia are injured (Bill, par. 8th).

The answer denies that any injury or damage has been done, is being done or will be done to the rivers, streams and springs by reason of fumes and gases from the plants of the defendants, and alleges that any injury or damage being done in this respect is attributable to forest fires, insects and other causes wholly beyond the control of respondents (Ans., par. 8).

PLAINTIFF'S PROOF:

Upon searching the record we have found no proof on the part of the plaintiff to the effect that the streams are in any manner injured except the broadest generalities from which might be deduced some theory that on account of effect of precipitation of moisture the stream conditions may be affected. We submit, however, that this, even in its strongest light, is a mere supposition and that it is not warranted by the facts, and that the allegation of the bill is not borne out by the proof.

DEFENDANT'S PROOF:

See the affidavits in support of argument of defendant Tennessee Copper Company, filed April 23, 1906.

Charles A. Weller states in his affidavit, page 27, of the foregoing volume that he is a practical mining engineer and that he is a geologist; that he has made a particular study of geological conditions of Fannin County, Ga., and that for five years past he has made a study of the streams of Fannin County for the purpose of determining the stability of such streams for water power purposes, that he finds the said streams have been in no wise affected. He states that he has made measurements and calculations and has taken photographs for the purpose of determining these questions, and that, based upon these observations,

there has been no perceptible change in the flow or volume of water (pp. 26, 27, 28).

M. J. Webb, Mayor of Ellijay, Ga., says, at page 39, that he is acquainted with the condition of the streams of North Georgia, and particularly of Murray, Gilmer and Fannin Counties; that the smoke from the smelting operations of defendants has not injured the streams, and that even the clearing for timber has had no worse effect upon the streams than would have been caused by clearing for agricultural purposes. This same statement, in effect, is made by 296 witnesses in the affidavits, pages 81 to 89, and to the same effect is the affidavit of G. G. Hyatt, page 95, in which he states that it is not true that the accumulation of moisture is prevented as alleged, but on the contrary the forest floor and sod are not affected for any appreciable distance. In the affidavit of 108 citizens of the Ducktown Mining District the statement is made that the streams are not injured or interfered with and that with the exception of the limited territory on property belonging to one or the other of the mining companies, there has been little or no waste of the soil in the past; that there is none in the present unless it be in the immediate vicinity of the old roast yards which belong to the Tennessee Copper Company, which condition was due to the operations had many years ago and which are now abandoned.

To the same effect are the following affidavits:

J. L. Center (pp. 103, 104).

H. E. Center (p. 113)

M. T. Dooley, Mayor of McKays, Georgia (p. 115).

To the same effect is the affidavit of Charles A. Weller of April 7, 1906, regarding investigation made supplemental to his former investigation.

B. E. Fernow, forester, in his affidavit, page 156, says:

> "While the general truth of the relation between forest cover and the stability of soil

and waterflow cannot for a moment be denied, and I have used the argument freely in the many years of endeavor to commit the people of the United States to more conservative forest use—yet, it must not be overlooked, and I have repeatedly accentuated the fact, that it is improper to generalize on this relation, other than forest conditions contributing to vary the relation in each locality; and it should be especially understood that it is not the trees that exercise the greatest influence, but the immediate soil cover of underbrush, litter, foliage, moss or other lower vegetation, and the tangle of roots are the essential factor in this relation. Hence not only a particular use, but the entire removal of a forest growth may, except in the steepest places, not produce any evil consequences, provided the lower soil cover and underbrush is not also destroyed by fire or otherwise, or reproduction to replace the old growth is not prevented. The proof for this proposition is to be found in all European forest administrations, which are not by mistaken philosophy or foolish sentimentality prevented from utilizing to the fullest extent their forest growth, and do so without endangering their soil and waterflow."

C. A. Schenck, forester, in his affidavit, page 169, says:

"The streams draining the territory described under zones 'A,' 'B' and 'C' form tributaries of the Toccoa River, which river, leaving the State of Georgia, winds its course in a northerly direction into and through the State of Tennessee.

Only one creek (which rises near Blue Ridge and runs southward, paralleling the L. & N. Railroad), finally joins the Ellijay river. Only eight square miles of its drainage basin belong to zone 'C'—none to zones 'A' and 'B.'

In the extreme northeast of zone 'C' are found some small tributaries on the Notally River, which joins the Hiawassee on its way north."

C. A. Schenck, forester, in his affidavit, page 8 of Volume II., filed by the Tennessee Copper Company on October 5, 1906, says:

> "The streams of the Ducktown region of Georgia, generally speaking, drain into and through the State of Tennessee. The gauge readings in the Hiawassee River, the principal stream of the Ducktown region, made by the Federal Government, are absolute proof of the fact that the presence of the smelter works does not interfere with the regularity of the stream flow. Indeed, the discharge of the Hiawassee River is known to be more steady and more regular than that of many another stream draining the southern Appalachian region. As a consequence, the water power obtainable from the Hiawassee is about to be developed on a large scale at a point situated 14 miles from the smelters, the engineers emphasizing the fact that the Hiawassee is a particularly desirable purveyor of power."

W. J. Mosenthal, forester, in the same volume, at page 20, says:

> "The streams observed in the region under observation, as hereinbefore mentioned, drain into and through the State of Tennessee. So far as this affiant could observe, there was no condition of these streams which is not common to the general Appalachian region. During the summer of 1906 freshets and cloudbursts of more or less serious nature have occurred throughout the southern part of the Appalachian system, and the effect upon the streams in this region has been no different from that upon streams in other parts of the southern Appalachians. So that in affiant's opinion there has been no injury to the streams of Georgia which may be ascribed to the influence of sulphur fumes."

The entire territory within the State of Georgia which is alleged to be affected drains into the Ocoee River, and thence into the Hiawassee River and on into Tennessee. It will be seen by the United States

Government Reports of "Progress of Stream Measurements for 1903," Part 2, and 1904, Part 5, that all of the streams which flow into the rivers of the Tennessee Valley, which includes the French Broad, the Tennessee, the Little Tennessee River, the Hiawassee River and the Ocoee River, which is the principal river of the district under discussion for those two years, 1903 and 1904, maintained its mean average flow better than any other stream.

See U. S. Government Reports of Progress of Stream Measurements, 1903, Part 2, and 1904, Part 5.

We submit that even if there should be the injury to streams alleged in the bill the injury does not work harm to the State of Georgia because of the fact that an inspection of the map demonstrates that the streams which could by any possibility be affected, drain into the State of Tennessee, and do not drain into the State of Georgia. It is shown by the affidavit of W. H. Freeland, page 24 of the exhibits to the answer of the Ducktown Sulphur, Copper and Iron Company, Limited, filed December 2, 1905, that the wild and native grasses which have sprung up over the region afford an abundence of fine pasturage for horses, cattle, sheep, &c., and that instead of being injured and killed, except immediately around the works, they grow in such luxuriant abundance as in affiant's opinion to afford as good, or better means of retaining the soil and moisture than the timber which had been cleared many years ago for firewood.

Third.—*The bill* alleges that the operations of the defendants have reduced the taxable value of the property within the counties named and hence have directly reduced the income and revenue of the State of Georgia (Bill, par. 13th).

The answer denies that the values of the lands

have been so reduced or that the operations of the defendants injuriously interfere with the revenues of the State and on the contrary shows affirmatively that the values of lands and the public revenue of the State of Georgia have been largely increased by reason of the operation of defendants' plants (Ans., par. 13th).

PLAINTIFF'S PROOF:

The only proof on this subject on behalf of plaintiff is a statement by the Comptroller-General of the State of Georgia setting out the fact that there has been a large number of acres of land returned and tabulated as abandoned. It is not shown in his affidavit, so far as we can find, what is meant by abandoned land; whether it be land which has been abandoned for some practical purpose and put in use for other purposes, or whether it means land which has decreased in agricultural value on account of its having been exhausted by agricultural pursuit to a point where the owner is relieved under some law of Georgia from the payment of taxes, or whether it is land which has been abandoned by citizens who have sought more profitable employment in plants of the defendants. We submit that it is not fairly deducible from the record in this case that this land was abandoned on account of sulphur fumes from the operations of defendants, and no such claim is made in the affidavit setting out the abandonment. We submit further that it is a matter of common knowledge that various quantities of land are abandoned in all communities, being what, among country people of the district under discussion, is commonly called "laid out," that is, no agricultural pursuit is carried on on the land and it is allowed for a greater or less period to rest. We believe that observation of the country from the car windows of any railroad east of the Mississippi River will demonstrate the fact that a very large proportion of land

is abandoned. Whether this would be abandoned land, under the laws of the State of Georgia, or not, does not appear from the record, and it does not appear that its being so abandoned is attributable in any sense to sulphur fumes.

In the beginning of this litigation it was apparent that the State of Georgia was endeavoring to prove loss of revenue, and hence direct interest to the State of Georgia in this litigation, by alleging the abandonment of many farms by the citizens of the territory alleged to be affected. Upon an examination of the record, and particularly of the affidavits filed in this cause by the State of Georgia on application for restraining order October 1, 1906, it is apparent that this theory of the State of Georgia has been abandoned. The printed forms of affidavits which were circulated through the northern part of Georgia and signed by many citizens have had eliminated from them, by having a pen run through the printed lines, the statement that farming lands have been abandoned on account of injury done to the property by smoke and fumes. So that we submit that the abandoned land mentioned by the Comptroller-General of the State of Georgia, in his affidavit filed October 1, 1906, does not necessarily mean that land has been abandoned on account of injury from smoke.

DEFENDANT'S PROOF:

Affidavits in support of argument of defendant, Tennessee Copper Company, filed April 23, 1906.

The affidavit of Charles M. Seymour, dated November 18, 1905, page 1, with its exhibits and tables, shows the tax returns from 1890 to 1905, inclusive, for the Counties of Murray, Gilmer, Fannin, Union and Towns. These affidavits and exhibits which appear in the above volume, page 1 to 18 inclusive, show a positive increase of tax values from the year 1897 to and including the year 1905. The

increase in all of the counties mentioned in tax valuation amounts to approximately $1,000,000 in these eight years. These figures are taken from certified statements signed by William A. Wright, Comptroller-General of the State of Georgia, filed as exhibits to the affidavit of Charles M. Seymour, and show a positive uniform increase in valuation. The only variance from the uniformity in increase in any of the counties being in Fannin County, in which it was found upon examination that there had been a reduction of $110,560 for the year 1905 in the tax valuation of one taxpayer, a tannery company, which reduction is shown to have been in no wise due to the operations of the defendant companies, and it is shown that eliminating this particular decrease there was a positive increase in Fannin County that year of $60,897 (we refer especially to table of values as set out on page 2).

In the same volume of affidavits above mentioned M. J. Webb, the Mayor of Ellijay, Ga., says:

> "The soil throughout the territory above mentioned is thin and poor as in other mountainous regions. There is no profitable farming and none can be carried on in those counties except in the most isolated cases. Many of the people living within those counties have abandoned their farms because of their unproductiveness, and leaving their property, have moved themselves and their families to Ducktown, Tennessee, where they could make a better living at mining than they could make upon their farms. This condition is true outside of any territory in any manner influenced by the smoke and gases from the Ducktown operations."

We submit that the statement made by Webb with respect to the abandonment of the farms of the district is a plausible statement and that it shows the real reason for such abandonment to have been not on account of fumes and smoke but on account of the

fact that the farmers were enabled to better their condition by leaving their farms and moving themselves to Ducktown, Tennessee, where they could obtain better wages for their labor than could be realized out of their agricultural pursuits.

Fourth.—*The bill* alleges that the health of the citizens of the State of Georgia had been impaired and will be still further injured and impaired by a continuance of the operations of the defendants (Bill, par. 14th).

The answer denies that the health of the citizens of Georgia has been or will be in any way affected or impaired by the fumes and smoke from the operations of defendants (Ans., par. 14th).

PLAINTIFF'S PROOF:

(*a.*) We have carefully examined the complainant's affidavits for the purpose of ascertaining whether any allegation has been made by any affidavit to the effect that the health of the citizens of Georgia is injured or impaired and we have been unable to find any statement in any affidavit to that effect, the strongest statement made being that, some of the witnesses have smelled the smoke which, as they described it, has a peculiar and unpleasant odor.

THE DEFENDANT'S PROOF:

(*a.*) In the volume of affidavits in support of argument of Tennessee Copper Company, filed April 23, 1906, there appears the affidavit of every physician practicing within the limits of those regions. On page 19 and 20, are the affidavits of B. M. Doyle, M. D., P. H. D., A. W. Lewis, M. D., C. M. Akin, M. D., L. E. Kinsey, M. D., R. L. Hydes, M. D. At page 21 to 24, appears the affidavit of H. H. Rogers, M. D., at 24–25, the affidavit of J. M. Daves, M. D., of Fannin County, Georgia. All of these physicians

state that they have practiced medicine in and around Ducktown for a number of years and that the health of the citizens has not been injured. Dr. Rogers states that he has practiced medicine at Ducktown during the entire copper operations, since 1878, with the exception of one or two years; that he is acquainted with the health and condition of the general community adjacent to said operations and that he has never known of any detrimental or injurious results from the fumes or gases. He states positively that the fumes and gases are not injurious to the health and that the general health of the community has not been injured nor impaired, nor has the vitality of the citizens and inhabitants of the district been lessened. We submit that the affidavit of Dr. Rogers is borne out by the affidavit of all of those other physicians, each of whom has has had personal experieuce in the treatment of diseases of the inhabitants of this district. Without going into detail we submit that the entire evidence of both of the defendants bears out the statements of these physicians and directly controverts the allegations of the bill with respect to injury to the health of the citizens of Georgia.

Fifth.—*The bill* alleges that the property of the citizens of the State of Georgia has been and is being seriously injured by reason of said operations within a radius of fifty miles in Georgia territory (Bill, Par. 5–12).

The answer denies that the property of the citizens of the State of Georgia has been or is being injured (Ans., Par. 7th), but shows on the contrary that said lands are made more valuable by reason of said operations (Ans., Par. 12th).

PLAINTIFF'S PROOF:

As heretofore stated the defense now takes the position that all questions have been eliminated from the controversy except the question of the effect of the injury, if any, by reason of these operations upon the properties of private citizens, and to the question whether or not those injuries to the properties of citizens, if they be established by the proof, give to the State of Georgia the right in its sovereign capacity to file this bill in their behalf. An inspection of the record demonstrates the statement heretofore made that all of the allegations of the bill with respect to the injury to properties of citizens are of the most general character, and that all of the statements made in the various affidavits filed on behalf of the plaintiff on that point are of such general nature that they cannot be dealt with on any basis other than denials of the most general character. The affidavits of the plaintiff upon which it insists that the properties of the citizens have been injured, consist of several different printed forms which were circulated through the region alleged to be affected and signed by numerous of the citizens of the State of Georgia. Most of those blanket forms of affidavits so signed do state that the properties of citizens have been injured. It is submitted, however, that the method of procuring these affidavits, their form, the mere fact that they were signed like ordinary petitions which might be circulated, and the fact that their statements are so broad and general, warrants the position taken by the defense that not only has defendants' proof left this question of injury to properties of citizens in doubt, but that the proof of the defendants preponderates on this question. In dealing with this question at this point we feel that it is not improper to call the Court's attention to certain affidavits made on behalf of the defendants explaining the general misconception of

the citizens of North Georgia in the signing of these printed forms:

Affidavits, Vol. II., filed Oct. 5th, 1906.
W. R. Early, p. 32.
W. H. Carver, p. 34.
G. C. Stepp, p. 36.
George Lanning, p. 39.
R. F. Ledford, p. 40.
F. M. Early, p. 176, of Vol. I.; filed Oct. 1st, 1906.

On page 45 of this brief we discuss the method, character and force of the affidavits submitted by plaintiff October 1, 1906. The same criticisms there stated can be applied to the affidavits presented by plaintiff in support of this question, and we respectfully refer to said criticisms there made.

DEFENDANT'S PROOF:

Affidavits filed by Ducktown Sulphur, Copper and Iron Company, Limited, December 2, 1905, on the question of restraining order at page 21, Mr. W. H. Freeland states that, although it has been many years since the Supreme Court of Tennessee held that citizens of adjoining States may sue in the Courts of this State for injuries resulting to their lands from smoke or fumes generated in this State, yet during the entire period of twelve years or longer covering said operations, only four residents of the State of Georgia, and one non-resident whose lands lie partly in both States, have ever complained of this defendant in the Courts of Tennessee, or in any other court or courts, on account of injuries alleged to have resulted from said fumes. And no claim or demand on the part of any citizen or resident of Georgia has ever been presented for compromise or settlement out of court. The names of the above mentioned five persons are W. M. Madison, M. A. Madison, T. M. Ross, Jr., W. P. Ledford and A. J.

Fortner. Their lands embrace about 800 acres, the total valuation of the same for taxes being less than fifteen hundred dollars. They are all in the same neighborhood adjoining the Tennessee line. G. G. Hyatt in his affidavit in the volume filed by the Tennessee Copper Company on April 23, 1906, at page 97, says that he is one of the attorneys for the defendants, that he is acquainted with the facts and that of his knowledge but four citizens of the State of Georgia have ever instituted suits in the courts against either of these two defendant copper companies—that he has made investigation for the purpose of ascertaining who have sued either of these two companies and that T. M. Ross, John A. Fortner, W. P. Ledford and Margaret A. Madison are the only Georgia citizens who have sued and that these persons did sue one or the other or both of the defendant companies. This is also stated in the affidavit of J. M. Senter, page 27 of the affidavits filed December 2, 1905, on behalf of the defendant Ducktown Sulphur, Copper and Iron Company, Limited. D. M. Stuart, at page 33 of the same volume, states that he owns a tract of land in the edge of North Carolina about three miles from said smelting works; that while said roasting operations were being carried on some injury resulted from the fumes arising therefrom to affiant's timber, orchards, &c., but that since the abandonment of the roasting operations no injury to said lands, timber, orchards or crops has resulted from the fumes coming from said smelting plant. M. T. Fouts, at page 37, says that from affiant's knowledge of the comparatively trifling injury in the small area of Fannin County contiguous to the mines, and from talking with some of the people, he believes that most, if not all, of the residents of said district who are directly interested in the matter are opposed to the effort being made by the State to shut down the mines. B. P. Rollins states that he has made an examination of the properties of those of the Georgia citizens who had brought

suits against the companies and on pages 40 and 41 he sets out the very small injury, if any, and states that the percentage of dead young growth was not more than is usually found in such timber. He further says, on page 42, that for many years past large quantities of timber have been dying throughout this section of East Tennessee, even beyond the reach of the smoke, that perhaps one year it will be chestnut, white oak or post oak; that another year would be the fruit trees injured. This is attributed to borers or worms; that he has given the matter considerable attention and that a considerable part of the injury that is attributed to fumes is really due to these borers. That he has talked with a considerable number of Georgia citizens of that district and that he believes that a majority of those citizens do not desire the mines shut down, but are simply wanting compensation. G. C. Parks, Chairman of the County Court of Polk County, Tennessee, on pages 45–49 of said volume, sets out the fact that trees are dying from causes other than fumes, that their death is universally attributed to fumes, and that the majority of the people in the district are opposed to shutting down the mines.

In the volume of affidavits filed by the Tennessee Copper Company April 23d, 1906, on preliminary restraining order, M. J. Webb, page 35, states that there has not been the injury alleged; that there is no profitable farming and none can be carried on in those counties except in the most isolated cases. Many of the people living within these counties have abandoned their farms because of their unproductiveness, and, leaving their property, have moved themselves and their families to Ducktown, where they could make a better living at mining than they could make upon their farms. He shows the increase in value of timber lands due to the copper industry at Ducktown. On page 37 he shows the increase in population on account of copper operations; he shows the increase of the demand for labor on account of the copper operations, and on

page 38 he shows that the products which can be raised have increased on account of the influx of the population. That wages for laboring men have increased from six cents per hour to from $1.50 to $2.50 per day. On page 40 he shows that the pines and chestnuts in North Georgia have died from cutting at improper seasons and that their death is invariably attributed to smoke. T. S. McKinney, a former resident of Blue Ridge, Georgia, an insurance man who now maintains an office at that place, shows that he has read the bill in this cause and that the allegations of injury contained therein are greatly exaggerated; that there has been no injury to vegetation within a radius of fifty miles of Ducktown, in the Georgia territory, and that the timber land belonging to affiant has not been injured, nor has other timber land in the neighborhood of his land.

This statement in respect to the exaggerations of the bill is borne out by the following affidavits:

120 citizens of Fannin County, Ga., pages 46-49;
17 citizens of Gilmer County, Ga , pages 50-51;
12 citizens of Towns County, Ga., page 47;
47 citizens of Union County, Ga., pages 54, 55;
24 citizens of Murray County, Ga., pages 55, 56.

C. L. Hensley, at page 58, states that he has resided for years in Fannin County, Georgia, and that there was no injury in his neighborhood.

G. C. Parks, Judge of the County Court of Polk County, and M. T. Fouts set out on pages 73-80 a trip made by them covering the surrounding territory. On page 74 they say:

> "The purpose of this examination in 1904 was to determine the relative condition of timber in the section of country similar to the country adjacent to Ducktown, where similar geological and forestry conditions prevailed. On that trip in 1904 the affiants started from a point near the centre of Polk County, and went westwardly, passing through the Town of Cleveland, in Bradley County, Tennessee; thence still westwardly through James County; and thence over

through Harrison, in Hamilton County, Tennessee, thence in a northwestwardly direction through Rhea County, Tennessee, and thence into Bledsoe County, Tennessee, and through Bledsoe County to and through Sequatchie County, Tennessee, and thence through Walker County, Georgia; thence through Catoosee County, Georgia; thence through Whitfield County, Georgia; thence through Murray County; thence through Gordan County; thence through Gilmer County, Georgia, and thence through Fannin and Union Counties, Georgia; and thence through Cherokee County, North Carolina, back into Polk County, Tennessee, at Ducktown. This trip was made for the particular purpose of comparing the conditions existing, as aforesaid, outside of any possible zone of injury, and on portions of this trip these affiants were at distances of from seventy-five to one hundred miles from Ducktown, in Polk County, Tennessee. During this trip, from the time of starting until these affiants returned into the immediate Ducktown district, there was absolutely no injury, the first injury seen being at a distance of not exceeding four miles from Ducktown, in Cherokee County, North Carolina, in what is known as the Angelico Gap. Affiants in making said trip carried note books and made notes of the conditions as found.

In Polk County, Tennessee, west of Frog Mountain, there was no apparent injury. In Bradley County, where there has never been any claim that there was any smoke injury, and where no one for a moment would contend that there could be any possible injury from smoke, it was found that the chestnut and chestnut oak and pine timber were dead and dying. Affiants inquired to ascertain the probable cause of the injury done to timber, and were informed that the condition of the timber was due to worms or to improvident cutting of the timber. Opinions differ among the people as to what was the cause of the injury, but none of them attributed the injury to the smoke. Upon inquiry it was found that the injured conditions of the timber had existed for more than fifty years. It was

learned upon inquiry of the oldest inhabitants that the chestnut timber which many years ago had been cut had gradually deteriorated until now there is practically no chestnut timber in that country. West of Cleveland in Bradley County, Tennessee, on White Oak Mountain, the same conditions prevailed and the same causes were assigned as before. On Walden's Ridge, further away from Ducktown, and at a distance of about seventy-five miles west of Ducktown, the timber was in worse condition than it had been found in Bradley County, or at any of the intermediate points. At this point on Walden's Ridge affiants travelled for approximately thirty-five miles through nothing but timber, and these same conditions were found to prevail throughout that territory. Careful note was taken of the conditions of this timber, and it was ascertained that the percentage of injured timber was greater at that distance than at any point in the territory adjacent to Ducktown with the exception of the timber in the immediate vicinity of the smelter plant. The same conditions of injury prevailed on Cumberland Mountain at a still greater distance than Walden's Ridge from Ducktown. From the Cumberland Plateau affiants went in a southwesterly direction, crossing the State line between Tennessee and Georgia near Chattanooga, and in passing went through the Chickamauga National Park, near Chattanooga. These same conditions of dead and injured timber existed even after affiants passed through said National Park in Walker County, Georgia, but within said National Park in Walker County, Georgia, said conditions did not exist from the fact that the timber is cared for and there are no forest fires, the dead wood is cut out and removed, and diseases and insects are not allowed to breed or become disseminated throughout the living timber."

They further say on pages 76 and 77:

"*At points nearer Ducktown the conditions prevailing were ascertained to be no worse than the conditions where they had travelled*

on the Cumberland Plateau and Walden's Ridge. So that the conditions existing could not have been in any sense attributable to the smoke from the Ducktown mines. Affiants inquired throughout this trip of the inhabitants of the territory covered as to the causes of the injury. Observations were made with respect to fires in the forest, and it was ascertained that throughout the region forest fires had prevailed, injuring the humus and forest floor covering, injuring the small growths and affecting more or less seriously the timber in all of its stages, even the larger trees being seriously affected by the fire in the undergrowth or foliage and litter on the ground."

In volume 1 of the supplemental affidavits filed by the Tennessee Copper Company, October 1, 1906, Mr. John M. Clancy, forester, at pages 4 and 5 says:

"In examining these injuries to the white pine, affiant found that their death or injuries were being caused by an insect, and in every instance where the white pines were found dead, it was found that they had been infected by *Dendroctonus frontalis*, the chief insect enemy of pine species of the United States. As far as this affiant could ascertain the death of the white pine in this region has been confined to the years 1905-1906. It is worthy of note that in other parts of the Southern Apalachian System and in parts of New England, this same death rate of white pine is occurring this year, and, in the opinion of several authorities, the death of these white pines is due to a fungus disease, the nature of which is not thoroughly known at present.

It was noted upon the examination that yellow pine throughout the district examined were for the most part green and apparently healthy. In the instances where dead yellow pines were found it was invariably found upon examination that these pines had been infested by *Dendroctonus frontalis*, and that death was without a doubt due to

these insects. In almost all instances of the death of these yellow pines the natives attributed the injury to smoke, while others admitted that the death of the pines was due to insects.

Stagheaded trees were found throughout this territory, but the average number of them were no greater than in other parts of the Southern Apalachian Range. Some of the natives claim that these stagheaded trees were due to the fumes from the smelting works. This is a wrong assumption, and is in no way ascribable to the sulphur fumes. A stagheaded tree is a tree which has reached maturity and whose vitality is beginning to wane. *In following up the few complaints of the natives, affiant found that in every instance the death of the trees was due to insects. This was borne out by repeated painstaking examinations.*"

We submit that his statement is fully borne out by all the affidavits touching that question filed as Volume 1 by the Tennessee Copper Company, October 5, 1906. C. A. Schenck, at page 10 of said volume, states that *the landowners in Northern Georgia are inclined to attribute to the action of sulphur fumes any actual damage to their crops, their orchards, pastures and their woodlands caused by frost, drought, excess of rainfall, insects, fungus diseases, fires and reckless management.* This, we think, is borne out by the affidavit of C. D. Howe at page 11, and W. J. Mosenthal at pages 18 and 19. Mr. Mosenthal, in speaking of his examinations made in August and September, 1905, May and June, 1906, and August and September, 1906, says:

"Apple and peach trees have nowhere been found to be damaged by smoke. Frequently farmers attribute any unhealthy appearance of the leaves of the apple trees to the action of the smoke. As a matter of fact, there is no doubt in affiant's opinion that such unhealthy condition of the leaves is due to attacks by insects and fungi. As an instance in point: A citizen of Morgantown, Georgia,

was interviewed, who stated that his peach trees had developed a disease which he had at first ascribed to the action of the sulphur smoke. Subsequently he sent specimens of the leaves to the State Entomologist of the State of Georgia, who decided that the affection of the trees was caused by a fungus disease known as a blight, and was in no way ascribable to the action of the sulphur smoke. Affiant has noticed apple trees, farms and gardens bearing bountiful crops at all distances from the smelting operations. In this connection photographs taken under direction of the affiant will be filed as part of his affidavit or that of A. H. Case, showing views of such trees."

This is borne out by Calvin L. Godfrey at page 38, and we submit by all the other evidence introduced for the defendants.

With respect to injury to the citizens of the State of Georgia, it is insisted that even if such injury be shown, and we submit that injury is not only doubtful, but that, on the contrary, the proof on this question preponderates in favor of defendants, such injury would not give the State of Georgia the right to file its bill in this cause on behalf of such citizens, they having the same rights which the State seeks in their behalf.

Sixth.—*The bill* alleges that at the October Term, 1903, of this Honorable Court, suit was instituted by plaintiff herein seeking to enjoin the then operations which were conducted by means of the open heap method. That said method being deemed by the State of Georgia and by the defendants to be the cause of the alleged nuisance, then existing, an agreement was entered into under which that method was abandoned and said suit dismissed (Bill, par. 18-19th). That the defendant, Tennessee Copper Company, has since removed its plant from a

point several miles within the State of Tennessee to a point adjacent to the State line between Tennessee and Georgia, thus extending the area of injury within the territory of the State of Georgia (Bill, par. 21st).

The answer admits that said process was believed by the officials of the State of Georgia and of the defendants to be the cause of such injury and damage as had theretofore been done, and that upon the insistence of the officials of the State of Georgia defendants abandoned said method and adopted the change of process complained of in the present bill (Ans., par. 19th). The answer denies that this defendant has so removed its roasting and reducing plant, but shows that its entire plant and works are where they were origiually located and constructed, and that they have never been removed (Ans., par. 21st).

PLAINTIFF'S PROOF:

The stipulation filed in the case of the State of Georgia *vs.* Ducktown Sulphur, Copper and Iron Co., the Tennessee Copper Company, and Pittsburg and Tennessee Copper Company, by virtue of which the bill, which had been filed by the State of Georgia in this Court at the October Term, 1903, was dismissed, and which stipulation appears as Exhibit "E" to the original bill in this cause, contains the following paragraph:

"Whereas, the Tennessee Copper Company since the filing of the bill in this cause has abandoned the roasting process and has lighted its last roast heap, *and that each and all of said companies have heretofore and by this agreement declared that after the present ignited heaps have burned out neither of them will again return to said method of roasting their ores, of which method the State of Georgia especially complained:*

It is, therefore, agreed between the State of Georgia and the defendants in consideration of this

stipulation on the part of said companies not to return to said method of roasting their said ores, that an order shall be entered specifying that said bill shall be dismissed."

This stipulation is admitted by the defendants and it is submitted to the Court that the State of Georgia is now in no position to make complaint of the result of a stipulation into which it voluntarily entered with the belief expressed that the conditions to be attended by the abandonment of the open heaps were preferable to the conditions existing theretofore. It is insisted that the State of Georgia is estopped from making any complaint with respect to the abandonment of the roasting process and the institution of the process of green ore smelting.

It appears in the affidavits of plaintiff filed in support of motion for leave to file the bill and for restraining order on October 23d, 1905, that John M. McCandless on page 14 says:

> "The Tennessee Copper Company which generates the major portion of the gas liberated, had in addition removed its plant to a point much nearer the Georgia line."

Mr. W. S. Yates, in his affidavit in the same volume, at page 18, says:

> "The investigation of 1905 discloses that the Tennessee Copper Company, from whose works the major portion of the damage arises, had removed its smelting plant to a point much nearer, in fact only a short distance from the Georgia line.."

Mr. T. G. Hudson says at page 20 of the same volume, filed Oct. 23, 1905:

> "The Tennessee Copper Company has recently removed its reducing plant to a point some miles nearer the Georgia line than its former location, and the gases being concen-

> trated and discharged from a tall chimney are carried much farther into Georgia territory than they could have been formerly under the open heap process of reducing ore."

In the volume of affidavits filed by the State of Georgia on application for restraining order, April 23, 1906, we have been unable to find any reference to the removal of the works as alleged in the bill, with the exception that it is stated in the affidavit of Will H. Shippen on page 275 of said volume, that while it may be true that no smelter may have been moved or erected nearer the territory of this State, the fact remains that the main production of the sulphur dioxid was moved much nearer, although this affidavit does not disclose how much nearer. As a matter of fact there was no such removal, the only change being that of the abandonment of the open roast heaps which had been located a distance of one-half or three-fourths of a mile from the smelter plant, and we submit that the record fairly shows from the stipulation entered into by all the parties that this abandonment was with the assent of the State of Georgia and was a matter for which these defendants should not now be criticised by the State of Georgia.

DEFENDANTS' PROOF:

J. Parke Channing, president, in his affidavit, page 147, says:

> "The Tennesse Copper Company purchased its property in Polk County, Tennessee, in the year 1899, and began the erection of its smelting plant in 1900, began roasting in May, 1901, and began smelting in August, 1901, at the same point where the smelter plant is now located, which point is about one-half mile distant from the State line between the States of Georgia and Tennessee Said Tennessee Copper Company has never moved its plant from said original location, and is still operating the same plant at the same point

> where the first operations were begun by it. So that W. S. Yeates, in his affidavit filed as an exhibit to the argument on application for leave to file and for restraining order, on page 18 thereof, is mistaken in his statement that 'the investigation of 1905 discloses that the Tennessee Copper Company, from whose work the major part of the damage arises, had removed its smelting plant to a point much nearer to the Georgia State line.'"

And the affidavit of John M. McCandless, filed as an exhibit to the argument on application for restraining order, is erroneous when it states on page 14 that "The Tennessee Copper Company, which generates the major portion of the gases liberated has removed its plant to a point much nearer the Georgia line." And Mr. T. G. Hudson, in his affidavit filed as an exhibit to the argument on application for leave to file and for restraining order in this cause, is mistaken when on page 20 he states that "The Tennessee Copper Company has recently removed its reducing plant to a point some miles nearer the Georgia line than its former location, and the gases being concentrated and discharged from a tall chimney are carried much further into Georgia territory than they could have been formerly under the open heap process of reducing ores." And the bill in this cause is evidently filed under a misapprehension of the facts when, in paragraph 21, on page 10 thereof, the statement is made: "The Tennessee Copper Company removed its roasting and reducing plant from a point several miles within the State of Tennessee to a location only about a quarter of a mile from the Georgia line." All of these statements are in error because of the fact that there has been no such removal.

Affidavit in support of argument of Tennessee Copper Company filed April 23, 1906. Witness Mr. Randolph Adams in his affidavit, page 124, of the above mentioned volume states that he has been general manager of the defendant Tennessee Cop-

per Company since that company began the erection of its plant in 1899, and that the smelter was there constructed and had there remained until this date (April 12, 1906), and has never been removed.

Mr. C. H. Glasser, mechanical engineer, states in his affidavit at page 133 as follows:

> "Affiant further states that the smelter plant of the Tennessee Copper Company was originally constructed at the same point where it is now located; that it has never been removed from any former location several miles within the State of Tennessee to any point nearer to the State line of the State of Georgia, but affiant shows, on the contrary, that the original construction of said smelter plant was begun at the same point as is now occupied by said smelter plant, and that said smelter plant had remained at that point ever since the beginning of its original construction."

Seventh.—*The bill* alleges that upon the abandonment of the open heap process of roasting, the defendants have instituted a new process which resulted in concentrating and making more powerful the gases and fumes (Bill, par. 20th); that the defendant Tennessee Copper Company is engaged in the erection of new furnaces and appliances now almost ready for operation, which will increase the volume of gases and fumes (Bill, par. 22d), and that it has been reported to plaintiff that the tall chimneys recently erected and now in use tend to spread the fumes over a wider area, thus increasing the injury (Bill, par. 23d).

The answer admits that since the abandonment of the open heap method of roasting ores, this defendant has instituted a new process for smelting and reducing said ores, which was the process instituted on the insistence of the officials of the State of Georgia, but it denies that the said new process increased or made more powerful the gases, fumes,

smoke and vapors, or that it increased the damage or injury (Ans., par. 27). It denies that new furnaces and appliances erected by Tennessee Copper Company doubled the capacity of respondent, but shows that the same were built partly to take the place of the old furnace then in use and partly to bring up the capacity of the plant of this respondent to what it was prior to the abandonment of the open heap roasting method, and shows that said new furnaces in connection with the dust chambers and tall stack removes from the smoke all harmful substances and emits the gases so high into the atmosphere that they diffuse with the air and become innocuous (Ans., par. 27th).

The answer denies that the tall chimneys referred to extend the area or increase the injury, and shows affirmatively that since the filing of the Bill in this case, the erection of a stack or chimney 325 feet in height has caused all the smoke and gases from said operations to be so diluted and diffused as to become wholly harmless and innocuous before reaching vegetation or plant life, and that the erection of this tall stack was with the acquiescence of the State of Georgia (Ans., par. 22d).

(It becomes quite apparent upon an examination of the Bill, the Answer and the Proof that the Bill was filed under a misapprehension and misunderstanding of the facts, that it was prepared on the assumption that the tall stack had been completed at the date of the filing of the Bill, October 23, 1905, when in fact the tall stack was not completed and put into operation until about April 1, 1906. The statements of the Bill are also shown by the record to have been under a misapprehension, when it is said that the four new furnaces will increase the injury or that the alleged concentration will make more powerful the gases and fumes, as those allegatious of the Bill made before the completion of the tall stack are not warranted by the proof in the record, the proof showing that the use of those furnaces in connection with the other fur-

naces and with the high stack and dust chambers do not cause injury.)

PLAINTIFF'S PROOF:

With respect to alleged injury since the completion of the tall stack, the proof of plaintiff in the record begins with the affidavits filed as exhibits to the argument for leave to file the bill, these affidavits being filed October 23, 1905, and all of them being upon the assumption that the chimney was at that time completed. It is interesting to note that Mr. McCandless, in his affidavit at page 14, says that, owing to the fact that the company has recently erected a high stack, the damage is increased. Mr. Yates, on page 18, states that the injury has been incurred by the building of the high stack. T. G. Hudson, page 20, states that the gases being concentrated and discharged from the tall chimney are carried much further into Georgia territory. Mr. McCandless, on page 16, states that the atmosphere will be contaminated for 177,557 square miles of air 100 feet in thickness in one year, though they all state that the gases are carried about by the movements of the atmosphere. As a matter of fact it is shown from the record that at the time these affidavits were made there was no tall chimney from which the smoke and gases was being emitted, as is stated in effect by Mr. McCandless in his affidavit, filed as exhibit on application for restraining order, April 23, 1906, page 45.

Mr. Chittenden in his report, filed as Exhibit "F" to the original bill in this cause, laboring under a misapprehension, which, we think, can be readily said to have been abandoned by the State of Georgia, states, on page 34, that "tall chimneys, now in use at the copper works, were erected with the idea of abating the smoke nuisance; it seems, however, that they tend to spread the fumes over a wider area." Chittenden's statement, made prior to the filing of the bill in this cause, October,

1905, is evidently made under a misapprehension because of the fact that the tall stack was not completed until April 1, 1906. Practically all of the affidavits of the plaintiff filed on April 23, 1906, deal with injuries to private property of citizens of Georgia in general terms and do not deal with the effect of the use of the tall stack upon the vegetation.

In the supplemental affidavits filed by the State of Georgia on October 1, 1906, which are the only affidavits submitted by the plaintiff after the completion of the high stack, the most of the proof of the sulphur fumes, deals with the effect of the stack during the summer of 1906. The statements made by citizens in these affidavits are broad and general, and an examination of the originals of these affidavits discloses the fact that for the most part they consist of five or six different printed forms used for the signature of the affiants, and it is quite apparent from examination of the affidavits that they were made with the understanding that they were most general in their terms. We submit that with the general statements made, and considering the broad charges and assertions made and considering the affidavit of John M. Clancy, forester, to the effect that in the fall of 1906 he went through the forest of North Georgia searching for injury and found that in nearly every case which came to his knowledge, where the complaint was made, that the injury complained of was due to insects, fungus diseases and other causes wholly and entirely separate from smoke injury, that plaintiff has not made out her case on this charge of the bill. We submit that this statement of Clancy, forester, is also borne out by the affidavit of Walter J. Mosenthal, forester, by the affidavit of C. A. Schenck, forester, and also by the photographic tests made by Arthur H. Case, as shown by the exhibits to his affidavit, filed on behalf of the defendants, Vol. I. and II., filed October, 1906, and that no injury is now being done.

It might seem at first glance that from the num-

ber of affidavits filed in the volume of exhibits of October 1, 1906, that there is a wide sentiment among the citizens of the State of Georgia on account of the alleged injuries. This is not the fact.

A few individuals have, either for personal or some ulterior motives, started the agitation and have been trying to create a sentiment against the copper companies. They brought their influence to bear to induce the State of Georgia to start proceedings, and they have been the prime movers and agitators ever since.

Counsel for the State of Georgia have submitted large numbers of affidavits of citizens. Such affidavits, however, do not in any way show the true sentiment of the citizens, nor even of those citizens who signed such affidavits. A large number of those who made affidavits for the State of Georgia were induced to make them under misapprehensions and misconceptions; a large number signed without reading them and without knowing the contents; a large number signed affidavits for the State of Georgia under the idea that the copper companies were about to greatly extend their plant and overwhelm the entire region with their fumes, and that they would never get any damages unless they signed them; a large number had not been damaged, but signed affidavits because they feared from these representations that they would be damaged; even some of them who signed and still claim that they were damaged would never have signed them had they thought there was any probability of forcing the mines to close down; and some of them signed from fear or favor because it had been represented to them that it was an easy matter for the companies to condense their fumes.

The affidavits of some of those citizens filed by the defendant Tennessee Copper Company in volume 2 on October 5, 1906, explain the methods used in obtaining those affidavits and the understanding among those citizens of Georgia with re-

spect to the contents of the forms signed, and with respect to the intent of the citizens of the State of Georgia in this litigation.

W. R. Early, pages 32-33 of volume 2, says that recently he was approached by one man who said that he represented the State of Georgia in this case, who requested that he make an affidavit which he had prepared in behalf of the State of Georgia. That in asking him to sign the affidavit he stated that it was simply for the purpose of making the copper companies condense their fumes and that they (the State of Georgia) were trying to make them do that as the copper companies were gradually increasing their business and would destroy all the country and vegetation around, *and that if he did not sign he would never be able to get damages against them if there should be any damage to him.* He states that he has heard from many of his friends in his neighborhood that they were approached by men representing the plaintiff, who made similar statements, and that some of them stated that they signed affidavits fearing that there would be some damage and that if there should be they wouldn't get any damages, and that they would never have signed if they had known it was for shutting down the mines, as they are desirous of having the mines in operation.

W. H. Carver, a farmer, land owner, and saw mill man, states that he has heard from some persons who signed the affidavits presented to them by the State of Georgia, that they would not have signed if they had known that it was for the purpose of shutting down the copper operations. That they signed because they understood or were told "if they did not sign it the companies were going to increase their business and do great damage all around, and if they did not sign they could never get damages."

G. C. Stepp, on page 36 of the same volume, says he signed a general affidavit or petition at Blue

Ridge, Georgia, on behalf of the plaintiff State of Georgia, and that

> "at the time of signing said affidavit the same was not read to him, but that he understood he was requested to sign said affidavit in order to get the copper companies to condense the smoke, and did not sign said affidavit for the purpose of having the copper companies shut down, for he is in favor of having the copper companies operate, and believes that it is best for all of the citizens of Fannin County that said copper companies continue to operate. He attended a mass meeting at Blue Ridge, Georgia, at which said affidavit was presented and signed, and he states that the signers of said affidavit signed it under the same impression as he did, which was that the companies would increase their plants, and he would never get any damages unless he signed said affidavit. It was also stated that the smoke would injure the whole country and he had better sign said affidavit if he expected to get any damage."

George Lanning, pages 39 and 40, states that a short time ago an attorney requested him to sign a paper which was stated to be simply an affidavit that was for the purpose of having the copper companies condense their smoke, and was not for the purpose of shutting the companies down That it was stated to affiant that all the residents and citizens were signing, and that he was told that he could sign it, and it would not hurt the copper companies at all, and that it was not necessary for him to read the affidavit. With this understanding this witness signed. He states further:

> "Since that time he has heard from many of the citizens in the neighborhood that they were sorry that they signed similar affidavits, having signed them under the same impression, and that if they had thought it was to stop the copper companies they would never have signed them, as they all think it much more beneficial for all concerned to have them continue business."

R. F. Ledford, pages 40 and 41, says that he signed an affidavit for the State of Georgia in this case with the understanding that it was for the purpose of having the copper companies condense the sulphur smoke. That he did not desire to be understood that he wanted the copper companies to be stopped from operating.

J. W. Hipp, at page 44 of the above mentioned volume, states that about ten days before making the affidavit for the defendants he signed a paper for the State of Georgia which he did not read or hear read, but he is now informed that the same was an affidavit for the closing down of the mines. He says that at the time he signed and executed said paper he did so with the understanding from the attorneys representing the plaintiff that the affidavit was not to close down mining operations at Ducktown, Tennessee, but was for the purpose of forcing the mining companies to condense the smoke. That if he had known the intent and purpose of the paper which he is now informed was an affidavit he would never have signed the same for said purposes.

W. G. Owenby, at page 45 of the above volume, states that he signed an affidavit on behalf of the plaintiff. That he understood at the time he signed the affidavit that it was not for the purpose of closing down the mines and works of the defendants, and that such was not the intent, desire or purpose of this suit.

S. C. Davenport, on page 47 of the above mentioned volume, says that he signed an affidavit for the plaintiff without reading it, and that it was his understanding that the affidavit was for the purpose of making the companies condense the smoke, and not for the purpose of closing them down.

H. K. Brown, at page 48 of the above mentioned volume states that one Thomas A. Brown came to where affiant was at a store in Fannin County, Georgia, and tried to get affiant to sign an affidavit without reading the same, and at the time gave

affiant to understand that the intent of the suit was not to close the mines down, and said affidavit was not for this purpose. Affiant did not sign said affidavit, because he wanted the mines to continue operations. Affiant further says that he saw Joe Vestal, George Lanning and some others sign said affidavit without reading the same or hearing the same read to them to affiant's knowledge, and that said Brown left the impression on all parties that if they signed the affidavit it would only be for the purpose of condensing the smoke and not closing down the mines.

F. M. Early, witness for defendants, at page 176 of Volume 1 of supplemental affidavits filed October 1, 1906, by defendant Tennessee Copper Company, states that he was approached with a form of affidavit already printed or written, for his signature. That when said affidavit was presented it was insisted that he should sign without reading the contents. That affiant objected and refused to sign, whereupon it was stated to affiant that if he would sign the affidavit and swear to same he would thereby get the value of his land out of the copper companies, but if he did not sign that he would not, therefore, be able to force the copper companies to compensate him, whereupon affiant told said Brown that the general complaint in the neighborhood was unwarranted, and untrue, and refused to sign the affidavit. This witness states that he knows of other persons to whom the affidavits were presented in this way; that he has heard several of the persons who signed state that they signed without knowledge of the contents of the affidavit signed, and that

> "Affiant has heard some of said affiants, who signed the petition or affidavit for said Brown, state since they signed said petition that they were not aware that said affidavits set out such facts as that they were damaged or injured by the smoke and fumes from the copper operations at Ducktown, but that they had since been informed that the paper they signed and verified contained such statements,

> and that such conditions did not exist in their neighborhood, and that if they signed such statements it was not their intention to do so and they did not wish to be understood in their affidavits as making statements to the effect that the copper operations in the Ducktown district in any way injured or damaged them."

So that it is insisted on behalf of the defendants that the affidavits introduced by the plaintiff in this case, on October 1, 1906, do not in any sense fairly represent the actual conditions existing, but that, on the contrary, if the affiants had understood the contents and purport of the affidavits they would not have signed them; and furthermore, upon the face of the affidavits themselves, they show that their statements are broad and general and that they contain such matter as might be assented to in a broad and general manner by any number of people of any locality.

It is a matter of common knowledge that it is not a difficult thing to obtain any number of signatures to a petition for any purpose, the number of the signatures being limited simply by the amount of time and ingenuity devoted to obtaining the names. It appears from the affidavit of Edward Hacker at page 49 of Volume 2 of the affidavits filed on behalf of the defendants on October 5, 1906, that he went to the Ducktown district for the purpose of obtaining supplemental affidavits on behalf of the defendants; that he spent four or five days in that district, and in that time secured about 130 affidavits of residents of Polk County, Tennessee, and Fannin County, Georgia, when he was instructed by counsel for defendants that they did not wish to further encumber the record with additional affidavits, whereupon he stopped taking affidavits. He states further that had he devoted more time he believes he could have secured several hundred additional similar affidavits of citizens and residents of both of said counties, as well as affi-

davits of citizens of other counties in North Georgia.

Even such of the plaintiff's witnesses as knew what they signed were laboring under a misapprehension, and are making statements not borne out by the actual conditions. As stated by C. A. Schenck in Volume 1, page 10, of Supplemental Affidavits, filed by Tennessee Copper Co., October 5, 1906, viz.:

> "The landowners in Northern Georgia are inclined to attribute to the action of sulphur fumes any actual damage to their crops, their orchards, pastures and woodlands caused by frost, drought, excessive rainfall, insects, fungus diseases, fires and reckless management."

John M. Clancy, another forester, sent to that territory for the specific purpose of investigation the injuries alleged to exist, states in Volume 1 of Supplemental Affidavits filed by Tennessee Copper Co. October 1st, 1906, at pages 4 and 6, that:

> "In following up the few complaints of the natives affiant found that in every instance the death of the trees was due to insects. This was borne out by repeated painstaking examinations."

This is also borne out by witness W. J. Mosenthal, forester, in Volume 2 of Supplemental Affidavits of Tennessee Copper Co., filed October 5, 1906, on page 19.

It is true that the State of Georgia has filed several affidavits of foresters on the question of injury to the forests in the Counties of Fannin and Gilmer during the summer of 1906, but defendant contends that the affidavits of the foresters filed by defendant in volumes 1 and 2, October 1st and 5th respectively, meet every statement made by plaintiffs' foresters' affidavits and flatly deny the statements made therein, and go further in stating that the effect of the gases since the use of the tall stack is not injurious to the forests. The statements made by plaintiffs' foresters in their affidavits are broad and gen-

eral, and none of them give any positive statement to the effect of damage, all of them seeming to sum up that because they saw that the leaves and foliage at various places were browned and seared and that in many places the trees were becoming defoliated that the trees were being injured by defendants' operations. In the affidavit of Haywood, filed by plaintiff, after making broad assertions of damage, his final conclusion states:

> "From deponent's investigations and examinations deponent is of the opinion that the far greater portion of the damage hereinbefore noted is attributable solely to the sulphur fumes of the copper companies at Ducktown; that is to say, that practically all the damage is attributable to said fumes other than the usual and normal injury to be found in average healthy forests similarly situated from occasional and comparatively insignificant insect injury, lightning and the like."

It is evident from this conclusion that Haywood is simply of the opinion and has no means of telling what part or how much of the injuries which he states as existing are attributable to the sulphur fumes. On the other hand, the experts who have made affidavit in behalf of the defendant Tennessee Copper Company emphatically deny that the sulphur fumes are causing injury and state that the injuries are no different than in the usual forest and timber lands throughout the United States, and that such injuries are attributable to reckless management, forest fires, fungus diseases and the like; and it is further set forth in defendants' volume filed October 5, 1906, that the forests in this district are in a deplorable state, due to the fact that forest fires are of frequent occurrence, and that no care is taken in the management thereof, &c., &c.

A similar criticism can be made of the affidavit, or rather the diary, of Charles A. Keffer, filed by plaintiff in reference to the condition of the forests

in this section during the summer of 1906. The sum and substance of his notes seem to be that he noticed dead trees throughout the forest and that trees of many species had their leaves browned and in many cases more than half of the leaves had fallen, and sums up by this statement:

> "and I believe this injury to be due from the fumes of the copper smelters at Ducktown and Isabella."

What has been said of these affidavits may be said with equal propriety of the other affidavits of experts filed by the plaintiff in this case.

We respectfully submit that these assumptions by plaintiff's witnesses leave the questions in doubt, and by opposing them with the affidavits of the experts filed in behalf of the defendants we feel that not alone do the affidavits on this question demonstrate that plaintiff has failed to make out its case, but that the weight of the evidence is in favor of the contentions of the defendants.

DEFENDANT'S PROOF:

Affidavits of Tennessee Copper Company, filed April 23, 1906.

Mr. J. Parke Channing, president, in his affidavit, at page 149, says:

> "Affiant further states that the statements made on page 6 of the argument in support of an application for preliminary injunction, is incorrect in the statement that the 'Tennessee Copper Company smelts about four times the amount of ore used by the Ducktown Sulphur, Copper and Iron Company, Limited, and that if the new furnaces are allowed to operate the Tennessee Copper Company will have about ten times the capacity of the Ducktown Sulphur, Copper and Iron Company.' The facts are that the Tennessee Copper Company at present is not smelting twice as much as the Ducktown Company, and that when its enlarged plant is in opera-

> tion its total smelting will not exceed, if equal, four times the amount treated by the Ducktown Company."

In his affidavit, filed April 25, 1906, Mr. Channing says:

> "That in its early stages the method of treating the ore was to first roast it in large heaps in the open air, driving off most of the sulphur, and to then smelt the residue in blast furnaces producing a high grade matte in one operation. That with the three furnaces which the company then had, the daily capacity was about 1,200 tons."

Later on, as is shown in the numerous affidavits connected with this case, improvements in the art demonstrated that it was possible to smelt this ore direct in the blast furnaces without any previous roasting so as to obtain a low grade matte. This low grade matte was then resmelted in a similar furnace and high grade matte produced. It was found that with two furnaces running on raw, or unroasted ore, it was necessary to keep the third furnace concentrating this low grade matte up to a high grade matte, and in addition to this it was noted that the furnace ran much slower on raw ore than on roasted ore. The result was, that the net capacity of the three furnaces was reduced from 1,200 tons of ore per day to 800 tons of ore per day. Having this tonnage reduction in view, and taking into consideration the developments in the mines, it was concluded to add to the plant four more furnaces, but only three more blowing engines, the idea being to keep six furnaces in continuous operation, thus having one spare furnace always out of commission and being put in repair. At the present time there are six furnaces, or the maximum, in operation, and they are capable of treating from 1,600 to 1,800 tons of ore per day" (pp. 1–2).

The principal allegation of the bill is, that the new stack spreads the area of injury. It will be noticed the volume of affidavits filed October 1, 1906, by the State of Georgia, and the two volumes filed, one on October 1, 1906, and one October 5, 1906, by the Tennessee Copper Company, confine themselves very largely to the question of the effect of the use of the tall stack upon vegetation during the season of 1906.

Affidavits were taken of more than 100 citizens and several experts conversant with the situation. C. A. Schenck, forester, in his affidavit, page 3 of Volume II., states that the investigations made, partly in person and partly through his assistants working under his supervision, have covered, to his best knowledge, the entire territory from which reports of alleged injury of vegetation due to sulphur fumes were received, and territory beyond. He states on page 9 that "no economic damage is resulting in Northern Georgia either in field, pasture or orchard from the operations of the smelters." He shows that the investigation based upon which he makes this affidavit is the second investigation made of that field, the first investigation having been made between August 28th and September 28th, 1905; the second investigation having been made during the months of May, June, July, August and September, 1906. That during the examination of 1906, as well as during the examination of 1905, great care was taken to examine in detail that part of the territory alleged in the bill to be affected by the sulphur fumes arising from the copper operations at Ducktown, Tennessee. This statement by Dr. Schenck, we submit, is borne out fully and completely by every affidavit taken by the defendant Tennessee Copper Company in the fall of 1906. Incident to the examination made by Dr. Schenck, a series of photographs was taken in June, 1906, and in August and September, 1906, of particular trees for

the express purpose of showing a comparison of conditions existing in the early summer and in the fall of that year.

In order that we might clearly explain conditions by distances, we have subdivided the affidavits of various residents of the district alleged to be affected, and have subdivided the photographs, filed October 1, 1906, according to distances, and it is demonstrated in this subdivision beyond all question that throughout the entire district there is no damage from the fumes emitted from the works of the Tennessee Copper Company.

Exhibits A–28, B–28, affidavit of Arthur H. Case, taken at a distance of 1 1/2 miles from the smelter, show at that distance healthy and thriving condition of vegetation.

We refer also within the distance of two miles from the smelter to the following affidavits in Volume 1:

J. R. Elrod, p. 17; N. C. Bandy, p. 19; J. B. Witt, p. 24; G. W. Abernethy, p. 30; F. M. Jones, p. 31; N. C. Powell, p. 33; W. B. Garrett, p. 35; J. M. Garrett, p. 36; A. A. McKinney, p. 39; J. H. Johnson, p. 42; James Aiken, p. 45; J. J. King, p. 56; W. M. Foster, p. 59; Joe Howard, p. 61; Thos. Mashburn, p. 64; J. L. Hickey, p. 65; G. C. Wallace, p. 67; A. J. Kell, p. 69; J. J. Barclay, p. 70; H. F. Barclay, p. 72; W. J. Matthews, p. 80; A. M. Ammons, p. 94, and C. M. Ledford, p. 100.

Showing that no injury is being done in the distance between two and four miles from the smelter, we particularly refer to the following photographic exhibits to the affidavit of Arthur H. Case:

A–13.	B–13.	3 1/2 miles from smelter.
A–14.	B–14.	3 1/2 miles from smelter.
A–15.	B–15.	4 miles from smelter.
A–31.	B–31.	3 1/2 miles from smelter.
A–32.	B–32.	3 1/2 miles from smelter.
C– 6.		8 1/2 miles from smelter.

And we also refer to the following affidavits in Vol. 1: N. C. Brady, p. 19; James Aiken, p. 45; W. R. Ledford, p. 48; T. P. Owen, p. 96; F. L. Harper, p. 109; and L. M. Ownes, p. 128.

Showing that no injury is being done at the distance of four to eight miles from the smelter, we particularly refer to the following photographic exhibits to the affidavit of Arthur H. Case:

A- 8.	B- 8.	6 miles from smelter.
A- 9.	B- 9.	7 miles from smelter.
A-10.	B-10.	6 miles from smelter.
A-11.	B-11.	5 miles from smelter.
A-12.	B-12.	4 1/2 miles from smelter.
A-16.	B-16.	6 1/2 miles from smelter.
A-17.	B-17.	7 1/2 miles from smelter.
A-24.	B-24.	7 1/2 miles from smelter.
A-25.	B-25.	7 1/2 miles from smelter.
A-26.	B-26.	6 miles from smelter.
A-27.	B-27.	4 miles from smelter.
A-30.	B-30.	5 1/2 miles.
A-34.	B-34.	5 1/2 miles.
A-35.	B-35.	7 miles.
A-41.	B-41.	7 7/8 miles.
A-43.	B-43.	6 miles.
A-45.	B-45.	7 miles.
A-46.	B-46.	8 miles.
A-50.	B-50.	7 3/4 miles.
A-51.	B-51.	6 miles.
A-52.	B-52.	5 1/2 miles.
A-53.	B-53.	4 miles.
C-27.		4 1/2 miles.

See also the following affidavits in Vol. 1:

J. J. Vellenworth, p. 45; W. J. Matthews, p. 81; J. N. Standridge, p. 86; R. L. Standridge, p. 97; C. N. Ledford, p. 100; Eli Justice, p. 153; J. M. Early, p. 171.

Showing that no injury is being done at the distance of from eight to twelve miles from the smelter, we particularly refer to the following photo-

graphic exhibits to the affidavit of Arthur H. Case:

A -5.	B- 5.	
A- 6.	B- 6.	10/2 miles from smelter.
A- 7.	B- 7.	9 miles.
A-18.	B-18.	8 1/2 miles from smelter.
A-19.	B-19.	9 1/2 miles.
A-20.	B-20.	10 miles.
A-21.	B-21.	11 miles.
A-22.	B-22.	9 1/2 miles.
A-23.	B-23.	8 1/2 miles.
A-29.	B-29.	8 miles.
A-36.	B-36.	9 miles.
A-37.	B-37.	10 miles.
A-38.	B-38.	12 miles.
A-39.	B-39.	11 1/2 miles.
A-40.	B-40.	9 miles.
A-47.	B-47.	9 miles.
A-48.	B-48.	11 1/2 miles.
A-49.	B-49.	8 miles.
C-1.		10 miles.
C-2.		10 1/2 miles.
C-7.		11 miles.
C-25.		11 1/2 miles.
C-26.		8 miles.
C-28.		11 miles.

See also the affidavits in Volume 1: W. J. Dehart, p. 85; W. J. Neely, p. 123; H. A. Matthews, p. 158; Benj. Ellison, p. 170; W. J. Parham, p. 172; Francis Millsaps, p. 173; F. M. Early, p. 174.

Showing that no injury is being done at the distances of twelve to sixteen miles from the smelter, we particularly refer to the following photographic exhibits to the affidavit of Arthur H. Case:

A- 1.	B- 1.	14 miles from smelter.
A- 2.	B- 2.	13 miles.
A- 3.	B- 3.	12 miles.

A- 4.	B- 4.	12 miles.
C- 3.		12 miles.
C- 4.		12 miles.
C- 5.		12 miles.
C- 8.		12 miles.
C- 9.		13 1/4 miles.
C-10.		15 1/2 miles.
C-24.		14 1/2 miles.
C-24.		14 1/2 miles.

We also refer to the following affidavits in Volume 1:

J. J. Vollenworth, page 50; E. B. Wilson, page 77; C. E. Foote, J. F. Smith, page 102; A. M. Price, page 106; M. L. Chancy, page 115; T. N. Henson, page 130; F. E. Hickey, page 149; G. M. Adams, page 154, and C. W. Killian, 155.

Showing that no injury is being done at the distance of sixteen to twenty miles from the smelter, we particularly refer to the following photographic exhibits to the affidavit of Arthur H. Case:

C-11. 17 miles from smelter.
C-12. 18 miles.
C-13. 20 miles.
C-22. 16 1/2 miles.
C-23. 16 1/4 miles.

We also refer to the following affidavits in Vol. 1:

H. C. Parrish, p. 82; W. P. Barclay, p. 95; C. W. Ledford, p. 100; A. L. Barnett, p. 104; B. Thomas, p. 116; H. G. Smith, p. 134; J. D. Jenkins, p. 136; J. L. Butler, p. 159; J. T. Collins, p. 168.

Showing that no injury is being done at a greater distance than 20 miles from the smelter we particularly refer to the following photographic exhibits to the affidavit of Arthur H. Case:

C-14. 21 miles.
C-15. 23 1/2 miles.
C-16. 23 1/2 miles.

C-17. 24 miles.
C-18. 22 1/2 miles.
C-19. 21 miles.
C-20. 20 1/2 miles.
C-21. 20 miles.

And we also refer to the following affidavits in Volume 1, at greater distance than 20 miles:

R. A, Barclay, 52; Arthur Witherow, p. 53; J. J. Barclay, p. 70; H. F. Barclay, p. 71; W. C. Bowers, p. 75; E. B. Wilson, p. 77; H. C. Parris, p. 82; C. E. Foote, p. 83; E. L. Greer, p. 89; Pearl Smith, p. 92; C. M. Ledford, p. 100; W. H. Barclay, p. 111; W. T. Goss, p. 119; W. H. Foster, p. 139; H. S. Johnson, p. 147; J. A. Thomason, p. 151; C. V. Rogers, p. 152 (pp. 15 to 20).

In the supplemental affidavits filed on October 1, 1906, the various witnesses made the following statements:

M. T. Dooley, at page 17, says:

> "That he has had frequent occasion since the operation of said stack to notice all forms of vegetation and the improved condition that has existed, and that no perceptible injury has been done to animal or vegetable life, but upon the contrary vegetation is in a thriving condition. Affiant states that he has noticed the smoke emanating from the new high stack of the Tennessee Copper Company; that it is carried high into the air and is thoroughly disseminated, so that there has been no injury from the smoke since the same has been passing through said stack."

N. C. Brady, at page 19, says:

> "He has lived in the immediate vicinity of the mines for the last ten years; that he was acquainted with the open heap method of roasting the copper ores, and has particularly noticed the operation of the new stack by the Tennessee Copper Company. Affiant further states upon his oath that since the operation

of the new stack, the general condition of vegetation has been greatly improved and that vegetation is not now affected by reason of mining operations in the immediate vicinity of the mines and works to affiant's own personal knowledge, and affiant has seen good crops of peaches, gardens and other farm products in the immediate vicinity where these mining operations are being continued."

Ed. Hedden, at page 22, says that:

"Affiant further states that the condition of vegetation is due to the improved methods now in use, the smoke now emanating from the new stack at a distance of about 325 feet from the ground, or a distance of approximately 500 feet above the level of the river and is so disseminated before reaching the earth as to have no damaging effect upon animal or vegetable life."

Arch Ballew, at page 23, says:

"Affiant further states upon his oath that all forms of vegetation are now green, thriving and in a healthy state, and this condition has been brought about and is the direct result of the improved methods of smelting now used by the Tennessee Copper Company. Affiant further states that all crops and farm products now cultivated and raised in the mining region are as good as the class and character of soil will produce; the land being thin and sterile, is not susceptible of producing extensive crops, and never was, to affiant's own personal knowledge, the chief industry being the mining of copper."

J. B. Witt, at page 25, states:

"Affiant states that he was acquainted with the old open heap roast method as well as the new method now in use by the Tennessee Copper Company. Affiant states that he has noticed the operation of the new stack of the Tennessee Copper Company. And he further states that all kinds of vegetation in the

vicinity of McKays, which is within one-half mile of the plant of the Tennessee Copper Company, is now green, thriving and in a healthy state, and that the smoke and gases from said plant have not been noticeable in this section this season."

T. C. Tippett, at page 26, says:

"Affiant further states that he has noticed the operation of the new stack of the Tennessee Copper Company, and the condition of vegetation in the vicinity since this stack was first placed in operation, but vegetation is in a green, thriving and healthy condition and excellent gardens are found near the plant where this smoke is generated. The improved condition of vegetation and the removal of injury to crops, fruits, &c., by the smoke, has been brought about by the carrying of this smoke through this tall stack of the Tennessee Copper Company, which is some 325 feet in height."

N. C. Powell, at page 32, says:

"That he is also familiar with the conditions since the erection of the tall chimney by the Tennessee Copper Company. Affiant has watched different forms of vegetation under the different methods used by the different companies. Prior to the time that the open heap method was abandoned, there was more or less damage to vegetation, and a great deal of complaint by the adjacent land owners, but since the new stack of the Tennessee Copper Company has been put in operation, to affiant's knowledge there has been no damage to vegetation, but on the contrary vegetation is green, thriving and apparently in a healthy condition and good crops of peaches and other fruits, together with garden vegetables and such crops as are cultivated are to be found in less than half a mile of the plant of the Tennessee Copper Company. The direct and proximate result of this improved condition, and the ability of the land owners to raise these crops is attributable in my opinion to the

improved methods now in use by the Tennessee Copper Company and especially the tall stack or chimney through which the smoke is carried to an elevation of some 325 feet. From affiant's experience and observations this smoke being emitted at this height is so diffused and disseminated before reaching the earth that the death dealing properties are thereby eliminated."

W. B. Garrett, at page 34, states:

"Affiant has been a close observer of conditions in Polk County, especially for the last seven to ten months, and states from his own personal knowledge, and observation, that no injury has been done to either the Fannin County, Georgia, or the Polk County, Tennessee, property by smoke emanating from the mines and works of the Tennessee Copper Company since the high stack or chimney has been in operation. Affiant states that at present all forms of vegetation are apparently healthy, green and thriving, and all the farm and garden products which are cultivated yield as good crops as the class and character of the soil will permit."

J. M. Garrett, on page 36, says:

"Affiant has been all over Fannin County, Georgia, and that portion of Polk County contiguous to the mines and works of the copper companies, and has had occasion to notice crops, orchards, timber and other forms of vegetation at the various places he has had occasion to visit. Affiant has also particularly noticed conditions in Polk County, Tennessee, and that portion of Fannin County adjacent to the copper operations, and especially so for the last twelve or fourteen months. Affiant states that he has frequently observed the smoke emanating from said high stack of the Tennessee Copper Company and that since the operation of said high stack he has seen no damage or injury to any timber, crops or other vegetation by reason of the smoke and fumes which emanate from said high stack or chimney."

John B. Green, a planing mill and lumber man, at page 40, says:

> "Affiant has been familiar with mining operations and conditions in and around Ducktown Mining District, and particularly for the last six months, and has had occasion to visit various portions of Fannin County, Georgia, and that portion of Polk County in the State of Tennessee immediately contiguous to the mines and works of the copper companies. He has also noticed the different crops, orchards and timber, together with various other forms of vegetation at the various places he has had occasion to visit. About April 1, 1906, the defendant Tennessee Copper Company put in operation a high stack or chimney, by which the smoke is sent out at an elevation of about 325 feet, and affiant believes that there has been no injury to vegetation, &c., adjacent to said stack since its operation by the Tennessee Copper Company. Affiant states that about two weeks ago he made an affidavit upon request of certain parties on behalf of the State of Georgia in this case, but he now states that he never has believed that the smoke which emanated from the high stack of the Tennessee Copper Company has done any injury to vegetation and does not want to be understood in his affidavit heretofore given in this cause on behalf of the State of Georgia that the smoke and fumes issuing from said tall stack of the Tennessee Copper Company does any injury to vegetation, &c."

J. J. Vellenoweth, a minister, at page 43, says:

> "This high stack has relieved the situation and people are thereby enabled to raise as good crops and garden vegetables in the immediate locality of where affiant lives as the class and character of the soil will permit. Affiant is the minister of the gospel, and during his appointments has traveled over territory in Fannin County, Georgia, of approximately twelve miles distant from the mines and works of the Tennessee Copper Company; he has had occasion to observe all

forms of vegetation in this territory, and affiant has not seen any trace of damage or injury from the smoke or fumes to any of the vegetation."

J. J. Barnes, physician and surgeon, in his affidavit on page 46, states:

"Affiant further states that he gave an affidavit in this cause on November 11, 1905, and here reiterates the statements therein made. Particularly since the erection and operation of the tall stack of the Tennessee Copper Company at its mines and works in Polk County, Tennessee, affiant has closely observed and particularly watched the different forms of vegetation adjacent to this copper plant. Affiant has traveled in a south and southwesterly and westerly direction in the State of Georgia, in Fannin County, covering territory wherein so much complaint has been made by citizens on account of this smoke. This complaint has caused affiant to closely observe all forms of vegetation and critically inspect crops, fruit, &c., with a view of ascertaining as to whether or not these people were in any way affected or their crops injured or damaged by smoke, and affiant states upon his oath that the results of his investigation have been that no perceptible injury or damage has been done by this smoke and these fumes from the copper operations since the installation and operation of this tall chimney or stack."

R. A. Barclay, deputy sheriff, in his affidavit on page 51, says:

"That he is a deputy sheriff of Polk County, Tennessee, which office he has held this the second term. He has lived at McCays for the last ten years. Affiant has been familiar with mining operations and conditions in and around the Ducktown District for practically all of his life, and has particulaly observed timber, crops and vegetation both before and after the erection of the tall stack by the Tennessee Copper Company. Affiant has traveled over Northern Georgia for more than

one hundred miles distant from McCays, Tennessee, and over East Tennessee to the Kentucky line, and has been in a position to know, and has closely observed and watched, vegetation under the different methods used in producing copper at Ducktown, and affiant says that since the erection and operation of the tall stack or chimney of the Tennessee Copper Company he has not been able to observe any perceptible injury or damage to timber, crops or vegetation within the territory above referred to."

Arthur Witherow, at page 58, says:

"Affiant has particularly noticed timber, crops and vegetation in the Ducktown Mining District both before and since the erection of the tall stack of the Tennessee Copper Company, and upon his oath says that no injury or damage has been done to any form of vegetation since the erection and operation of this said stack by the Tennessee Copper Company. Affiant has traveled over a portion of North Georgia for a radius of about sixty miles and is in a position to know and does know the general condition of the vegetation, timber, &c., within this territory, and that vegetation generally is in a green, thriving and healthy condition and not injured."

Mr. J. L. Collector, merchant, says on page 73:

"Affiant states from his own personal knowledge that since the erection of the tall stack of the Tennessee Copper Company, which was put in operation about April, 1906, that no perceptible damage has been done by the smoke."

D. W. Tilley, at page 99, says:

"Affiant says that since the operation of said stack, he has had occasion to notice vegetation in this territory and particularly crops and fruits, and none of them have been affected by smoke since this stack was put in operation."

C. M. Ledford, at page 100, says:

> "He has had occasion to examine vegetation within this territory with a view of ascertaining as to whether or not same was injured or damaged by smoke since the operation of the tall stack now in use by the Tennessee Copper Company and affiant states that no perceptible injury or damage has been done since said stack was put in operation to vegetation, but on the contrary the cause of the injury theretofore existing has been removed, the situation relieved, so much so that the people are now able to raise good crops, gardens and fruit without damage or injury by smoke."

Mr. B. R. Green, at page 101, says:

> "Affiant has had occasion to inspect vegetation within this territory, and states that as a result of his inspection that no damage or injury has been done to timber, crops or vegetation since said stack was put in operation by the Tennessee Copper Company in said territory.

A. C. Parris, at page 103, says:

> "Affiant has examined and watched vegetation, both before and after the tall stack of the Tennessee Copper Company was put in operation, and states as a result of his investigations and inspections that no injury or damage has been done to any form of vegetation, crops, or adjacent to the mines and works of the copper companies in Polk County, Tennessee, since the operation of the new tall stack of the Tennessee Copper Company.

A. L. Barnett, at page 104, says:

> "He has noticed vegetation both in Polk County, Tennessee, and has also traveled over portions of Fannin, Gilmer and other counties in North Georgia since the erection of the tall stack now in use by the Tennessee Copper Company. He has had occasion to watch,

observe and inspect the vegetation since the erection of said stack, and affiant states as a result of his investigations that no perceptible damage or injury has been done to vegetation to affiant's knowledge since said chimney or stack has been put in operation by Tennessee Copper Company. But, on the other hand, said stack had apparently relieved the situation and removed the cause of injury so that during the present season good crops and garden vegetables and fruit can now successfully be cultivated within the territory aforesaid without damage by injury from smoke so far as the knowledge of affiant extends. Affiant is a minister of the gospel and has had occasion during his travels to observe more than casually this condition which this high stack, according to affiant's belief, has relieved."

W. H. Barclay, at page 111, says:

"Affiant says that he is familiar with conditions in Polk County, Tennessee; in Fannin County, Gilmer County and other counties in the State of Georgia, and has had occasion to closely observe and minutely inspect timber, crops and vegetation in the above territory since the erection and operation of the tall stack put in operation by the Tennessee Copper Company about April, 1906, and as a result of inspections and observations of affiant upon his oath, he says no perceptible damage or injury has been done to crops and timber in said territory to his knowledge since said stack was placed in operation."

M. L. Chancey, at page 115, says:

"Affiant has had occasion to inspect and examine timber, crops and vegetation, both in the Ducktown District and in Fannin County, Georgia, since the operation of the tall stack or chimney now in use by the Tennessee Copper Company, and upon his oath says that, as a result of his inspection and general observations, no damage or injury has

been done to timber, crops or vegetation either in the Ducktown district or in Fannin County, Georgia, since the operation of said stack, but, on the contrary, affiant says that during the present season better crops are raised than have been raised in any time past to affiant's own personal knowledge."

B. Thomas, at page 116, says:

"That he is a citizen and resident of Fannin County, Georgia, residing about twenty miles from the mines and works of the Tennessee Copper Company, and is familiar with the territory generally and with mining operations carried on at Ducktown. Affiant has examined and noticed vegetation in the territory since the erection and construction of the tall stack now in use by the Tennessee Copper Company, and that since the operation of said stack affiant has also been in portions of Union County, in the State of Georgia, and affiant says upon his oath, as a result of his investigations of vegetation in the territory above referred to, that no perceptible damage or injury has been done by smoke or fumes arising from the copper operations since the operation of the tall chimney now in use by the Tennessee Copper Company, but that, on the contrary, good crops unaffected by smoke are to be found throughout the aforesaid territory."

J. E. Wilson, at page 118, says:

"That he resides about five or six or seven miles from the mines and works of the Tennessee Copper Company and in Fannin County, Georgia; that he has been familiar with the mining district and the various mining operations practically all of his life, and affiant says that so far as his knowledge extends no perceptible injury has been done to timber, crops or vegetation in the territory aforesaid since the erection and operation of the tall stack now in use by the Tennessee Copper Company."

I. D. Jenkins, at page 136, says:

> "That he is a resident and citizen of Fannin County, Georgia, and has resided in Georgia about ten years; that he has traveled practically all over Fannin County and portions of Gilmer County, in the State of Georgia, and knows the general conditions existing with reference to mining in the Ducktown district. Affiant states on his oath that no damage or injury has been done to timber, crops, or vegetation in this territory since the erection of the tall stack now in use by the Tennessee Copper Company."

C. V. Rogers, at page 152, says;

> "He has been familiar with the conditions in and around Ducktown for about sixteen months, but prior to this time has lived and resided in Union County, Georgia. Affiant had occasion to visit his home in Union County, Georgia, about a month ago, August, 1906, and incidentally passed through other portions of Fannin County, in the State of Georgia. He has had occasion to observe timber, crops and vegetation within this territory and inspect the same since the operation of the new stack of the Tennessee Copper Company. And affiant says that no damage or injury has been done to timber, crops or vegetation of any class or character in the above territory since the erection and operation of the stack above referred to."

Eli Justice, at page 153, says:

> "That he is a resident and citizen of Fannin County, Georgia, and owns land in North Georgia, and has lived and resided in Georgia altogether about five years, and he is familiar with the mining operations and the conditions of vegetation in and around Ducktown, Tennessee, and particularly so since the operation of the tall stack now used by the Tennessee Copper Company, and likewise is acquainted with different portions of the State of North Georgia for a distance of approximately five

miles and knows the condition of vegetation in this territory which he has visited since the operation of the tall stack of the Tennessee Copper Company; and affiant says that no damage or injury has been done to any class or character of vegetation, including gardens, field crops, timber, &c., since said stack has been operated by the Tennessee Copper Company."

D. A. Jones, at page 162, says:

"That he is a citizen and resident of Fannin County, Georgia, where he had lived all of his life, and he is familiar with the conditions of vegetation and also with the mining industry in the Ducktown District, and since the high stack of the Tennessee Copper Company was put into operation has examined and inspected timber, crops and vegetation in portions of Fannin County, Georgia, as well as closer to the mines. He has also examined his own crops, and affiant can say and does say that no perceptible damage or injury has been done by smoke emanating from the Ducktown copper works to any crops, timber or vegetation within the above territory to his knowledge since the stack was put in operation."

Benjamin Ellison, age seventy-six years, says:

"That he is a citizen and resident of Fannin County, Georgia, and has resided in Georgia for fifty odd years. Affiant is a farmer and engaged in raising field crops, fruit, &c. Affiant says that since the erection of the tall chimney by the Tennessee Copper Company last April he has had good crops, fruits, &c., and that he has not been able to detect any injury or damage from smoke or fumes from the copper works at Ducktown. Affiant resides about eight miles from Ducktown. Affiant says that his field crops, fruits, &c., are in fine condition."

Without elaborating further we submit that it is clearly and positively shown by more than one hun-

dred affidavits taken that there has been no injury since April 1, 1906, when the tall stack was erected.

The affidavit of John M. Clancy, forester, page 1, of the above volume, shows that he examined in detail during the month of August, 1906, the territory alleged in the bill to be affected. He shows that he not only examined the timber which he found had the appearance of injury, but on page 3 he says:

> "This affiant sought for complaining natives and in every instance made personal examinations of alleged injury from the Copper Company's smoke, and in most instances these investigations were made in company with the owners of the lands on which alleged injury occurred, and it was invariably found upon investigation that in such instances where natives claimed that trees had been killed by sulphur fumes, such trees were infested with bark beetles of a species known to have killed large tracts of timber, in many districts throughout the United States. *Some of the natives agreed with affiant that death of the timber was due to the insects and not smoke.*
>
> It was noted by affiant that throughout the region a large majority of the white pines, which had comprised much less than one per cent. of the stand of timber were in a dead and dying condition, and such of the natives as made any complaint attributed this condition to the action of the sulphur fumes from the copper works."

And further, on page 5, he says:

> "*In following up the few complaints of the natives, affiant found that in every instance the death of the trees was due to insects. This was borne out by repeated painstaking examinations.*"

In support of the affidavits of the defendants' foresters in reference to the condition of the woodland, farms, &c., existing in this region, we beg leave to call attention to a quotation from the article of Mr. Overton H. Price on pages 363 to 365 of the year book of 1900 referred to in defendants' supple-

mental affidavits, Volume 2, filed October 5th, which contains the following:

"Fire has done, and continues to do, enormous damage in the Southern Appalachians. This has been the result not only of local conditions, which are exceedingly favorable to fires, but of a very passive sentiment in regard to them. In most great forest regions, with increase in population, has grown a more determined attitude toward forest fires and a consequent falling off in the frequency of their occurrence. This has not yet been the case in the Southern Appalachians. The area burned over annually has increased rather than diminished, and the general feeling among the natives is one of somewhat placid resignation to an evil which is not fully realized and which is considered almost inevitable. Inevitable it surely is not; but there are several factors which combine to render fires in this region exceedingly difficult to check when once they are started. The absence of snow except for short periods, or of a marked rainy season, makes the danger a generally constant one throughout the time when the trees are leafless. There are seldom in the higher mountains any clearings or natural openings to serve as fire breaks, and the forests contain a large amount of dead timber, which adds power to the fire.

There is not enough game in the Southern Appalachians to encourage camping during the autumn and winter months, and very few of the forest fires can be laid to campers. The numbers set maliciously is also small. Some are undoubtedly started each year by carelessness in the lumber camps from the burning of tops and branches in the recent clearings, or by tourists and cattlemen. *By far the larger number, however, are the result of the long established practice of burning over the woods in the autumn under the belief that better pasturage is thus obtained the following year.* These fires are set by the farmers on the area upon which they expect to turn out their sheep and cattle during the next season, and there is rarely an attempt made to confine them unless a neighbor's

house or barn should be endangered. The consequence is that, except when isolated by roads or clearings, they often spread from the wood lots of the valleys and foothills in which they are set out to the forests of the higher mountains, where they burn unmolested for days or even weeks, until finally extinguished by rain, snow, contrary wind or lack of inflammable material in the sparse forests of the stony upper slopes. These fires are set year after year upon the same areas. They decrease annually in heat and power on the areas already burned over until finally, with almost every vestige of the humus destroyed and the mineral soil baked and hardened, there is but little left upon the ground to burn except the leaf fall of the preceding season."

He says on page 364:

"The immediate damage done by fire in the southern Appalachians is much slighter than in the evergreen forests of the North and West. Crown fires are rare, except in particularly dry seasons and under a high wind, and it is seldom that trees are consumed or even killed outright, except in second growth and young woods. The chief harm done is in the killing of young tree growth and in the decay which starts from the scars left at the base of the trees, to which the yellow poplar, the white oak and the hickories are particularly susceptible. The first thing for the timber cruiser here, after he has satisfied himself of the size and quality of the merchantable stand, is too look for traces of severe fires. Should they have run over the area, it is possible that the labor and loss in timber of butting off the decayed portion at the base of the tree may seriously impair the profit from the lumbering.

Apart from damage to the merchantable stand, the result of fire is here also greatly to disturb the balance between the different trees, a matter of some importance where there is so large a number in mixture, many of which are practically worthless. For example, the dogwood, sourwood, black jack and scrub oak offer great resistance to fire,

and are characteristic kinds in the young growth on burned over lands. Repeated fires on white oak and poplar land will soon dry out and impoverish the soil as to render it unfit for the reproduction of those species, to which a moist rich soil is necessary. On the foothills and in the larger valleys, where the shortleaf pine enters prominently into the mixture, oak forests are constantly being converted into pine forests through the agency of fires. A dense growth of kalmia is frequently the result of repeated fires on south slopes and renders the growth of the seedlings difficult or even impossible."

It is submitted that the proof of the plaintiff leaves such doubts with respect to injury, and cause of alleged injury, and that the proof of the defendants so preponderates the proof of the plaintiff, that the Court will follow the rule as announced in High on Injunctions, 4th Ed., Volume 1, Sec. 870, with authorities cited, that **the evidence upon which a court will perpetuate an injunction in this class of cases must clearly establish the essential allegations of the Bill, the burden of proof being on the plaintiff, and where the evidence consists only of the opinions of witnesses, there being great contrariety of opinion, it will not suffice to make an injunction perpetual.**

In any view of the record of this case it cannot be maintained that the questions involved are free from doubt, and it is with that doubt in mind that we think that the rule is particularly applicable to this case.

Sulphuric Acid.

While there is no allegation in the bill to the effect that the methods used by the defendant are not up to the highest standard of the art, and while there is no allegation in the bill that the treatment of the ores and the operations of the defendants

could be carried on without creating the fumes mentioned, yet it is argued by inference from the affidavits filed October 1, 1906, on behalf of the plaintiff, that the fumes created by the defendants could easily and economically be concentrated into sulphuric acid. The evidence of the plaintiff shows a large consumption of sulphuric acid in the fertilizer trade in the South, but it shows conclusively that all of that sulphuric acid is made from ores imported to this country from Spain; it does not show that the manufacture of sulphuric acid from copper ores of this country is either scientifically or commercially possible, and we submit that from the plaintiff's own proof the inferences to be drawn with respect to the feasibility of the manufacture of sulphuric acid from these fumes are all against the contention by plaintiff that these fumes can be precipitated. In the first place, the mere showing made by the plaintiff of the large demand for sulphuric acid in the South (the brief of counsel for plaintiff showing that Tennessee and the adjacent States of Georgia, North and South Carolina, Alabama and Florida, are shown in 1904 to have used 2,047,950 tons of fertilizer, necessitating the consumption of approximately 55 per cent. of its own weight in sulphuric acid), and the fact as stated in plainttiff's proof that that acid is made from ores shipped from Spain, would lead naturally to the conclusion that the manufacture of acid from the ores closer at hand, is impossible. With the consumption of acid running to more than one million tons as alleged, it would be natural to suppose that the acid would be manufactured from ores of this country, if it were possible to do so, rather than pay the enormous charges involved in the shipment of ore from Spain. On this point the affiants of the plaintiff make the following statements in the record of affidavits filed on October 1, 1906:

Mr. B. F. Sams, on page 50, says:

> "In order to obtain the sulpuric acid necessary for the conduct of said fertilizer business, sulphur pyrites are purchased and shipped to said plant from Spain and elsewhere at an average approximate cost of $8.50 per ton. One ton of the highest grade of pyrites averaging 50% sulphur, produces nearly one ton of sulphur dioxid."

Mr. D. B. Osborne, on page 53, makes the same statement in the same identical language as is made by Mr. Sams, with the exception that he approximates the cost of ore from Spain at $9 per ton.

Mr. H. A. Rogers, on page 55, makes the same statement in the same identical language, with the exception that he places the approximate cost of the ore at $8.60 per ton.

Dr. McCandless, on page 60 of the same volume, states that from ore running 30 per cent. in sulphur with 1,800 tons of ore treated per day by this defendant, 965,687 tons of weak sulphuric acid could be produced annually. It will be noticed however, that no witness for the plaintiff at any point in any volume of evidence filed in this case states that sulphuric acid has ever been made from copper ores carrying 30 per cent. or less of sulphur by any plant operating in this or any other country. No single instance is pointed out where the manufacture of sulphuric acid has ever been accomplished from an ore of this character, and the strongest statements made by any of the witnesses for the plaintiff resolve themselves into mere assumptions and speculations.

On the contrary, the evidence of the defendants shows conclusively that the manufacture of sulphuric acid from ore of this character has never yet been an accomplished fact. Dr. Ricketts, in his affidavit, pages 12-14 of the affidavits filed by the defendant Ducktown Sulphur, Copper and Iron Company, Limited, on December 2, 1905, states that he

for several years past has held the chair of Analytical Chemistry and Assaying at Coulmbia College School of Mines, now resigned; that he is familiar with the Ducktown mines and ores and:

> "Affiant further states that when the Ducktown Sulphur Copper and Iron Company, Limited, went into that district about 1891 he acted as its consulting engineer and metallurgist, and that under his advice and direction the better part of two years and something like $200,000 were expended in various tests and experiments to find some way of utilizing the iron and sulphur contents of the ores. That stall roasting, kiln roasting, roasting in revolving cylinders, and various other methods were tried. Special kilns of expensive character were built. None of them were successful, and it was upon affiant's advice that the Company finally fell back upon the only method theretofore used, to wit, preliminary open heap roasting before smelting."

Mr. W. H. Freeland, in the same volume, at page 18, after stating the experiments made by his company, states:

> "Many new experiments, as well as every known method of treating copper ores, were tried, but all proved fruitless. The defendant was forced either to fall back upon the old method which had always theretofore been used, or else quit the field. Affiant is also informed and believes that some of the leading copper companies have had for many years standing rewards for the discovery of a method or process by which the iron and sulphur contents of such ores may be utilized. That there is every financial inducement for saving them is self-evident."

Mr. Freeland further states that his company, the defendant Ducktown Sulphur, Copper and Iron Company, Limited, is still experimenting with this

proposition with the hope of solving it to such extent as to be able to precipitate acids from its fumes.

Mr. J. Parke Channing, president of Tennessee Copper Company, a recognized authority on copper mining and smelting, in his affidavit filed as one of the exhibits by the Tennessee Copper Company, on application of plaintiff for preliminary restraining order, April 23, 1906, at page 151, says:

> "Affiant further states that the present methods of manufacturing copper by the Tennessee Copper Company are according to the highest known state of the art; that every improvement has been used which has been found to be in any way practicable or feasible.
>
> It has invariably been the object and the practice of the officials of the Tennessee Copper Company to exercise every precaution known to the arts in order to avoid any possible ground for complaint of injury from the fumes emanating from the plant, and everything has been done within the power of the officials of the Tennessee Copper Company regardless of expense to satisfy the complaints of the citizens of the State of Georgia, as well as the complaints of any other person claiming to be injured."

Mr. Channing, in his supplemental affidavit, filed on April 25, 1906, at page 3, says that he is personally conversant with all of the copper smelting plants in the United States, Canada and Mexico, *and that from his own knowledge, at the present day, not one of such works is producing commercial sulphuric acid even in small or limited quantities.* He states, on page 4, that the usual sulphur ore from Spain contains 50 per cent. of sulphur, and that from Sicily and Louisiana 99 per cent of sulphur, whereas the ore from the mines of the Tennessee Copper Company will not carry to exceed 30 per cent. of sulphur, and that even should a chamber plant be built to utilize the gases from the furnaces it would still

be in the nature of a huge experiment. On pages 2 and 3, in explanation of the efforts of the Tennessee Copper Company to produce sulphuric acid from its gases, he says:

> "From the very beginning of the operation of the Tennessee Copper Company, the affiant has always had in view the possibility of utilizing the waste gases from the operation of the plant and its conversion into merchantable sulphuric acid. During the time that the heap roasting method was in operation, the major portion of the sulphur was driven off in the roast yards where it obviously could not be collected, and that portion driven off in the blast furnaces, smelting the roasted ore, was in such an attenuated form that any hope of its recovery was futile. As soon, however, as the direct smelting of the ore in the blast furnaces became an accomplished fact, it was observed, as had been expected, that the gases were much richer in sulphur than in the old method, because all of the sulphur was being emitted from the furnaces, and tests and experiments were immediately begun, and have continued, and are now being carried on to-day so as to determine whether it is technically possible to produce commercial sulphuric acid from the furnace gases.
>
> The article referred to in the affidavit of Mr. Shippen was written about 18 months ago for the *Engineering and Mining Journal*, a technical paper, and was one of a series of articles contributed by copper smeltermen in the United States, Mexico and Canada; and, while the statements contained therein are technically and scientifically true, still, the practical demonstration is yet experimental, and the affiant has not yet demonstrated that the production of sulphuric acid at the works of the Tennessee Copper Company would prove either a possibility or a commercial success, or that he would be able to dispose of even a portion, much less all, of the sulphuric acid which might be produced from the treatment of these ores. He is still experimenting and investigating this matter and the prob-

> lem turns out to be an extremely complex one, involving the question of freight rates on all of the railroads of the South; of the competition of sulphur ore from Spain, Sicily, Louisiana, and the various pyrites mines of the Southern States. It involves the careful investigation of the plants at present engaged in the manufacture of sulphuric acid, and, not least of all, the ultimate capacity of the South to absorb and utilize a product of this kind."

Mr. J. H. Sussman, at page 23, Volume 2 of the supplemental affidavits filed by the Tennessee Copper Company on October 5, 1906, in explanation of the present efforts being made by the Tennessee Copper Company in their experiments with this problem, says at the time of making his affidavit, September 29, 1906, that over $100,000 had been actually disbursed on account of the construction of and chambers, and in addition over $400,000 worth of material and machinery had been contracted for, and that although this work is being pushed to completion it is yet in the nature of a huge experiment, for until an actual demonstration by actual operation is had, it is not yet certain whether the production of sulphuric acid at the works of the Tennessee Copper Company will be either technically or commercially possible.

From the foregoing it is submitted that this record bears out the contention of these defendants that the manufacture of sulphuric acid from ores of the class and character of the Ducktown ores has never been demonstrated either as a scientific or as a commercial possibility. But we do submit that the defendants in this respect cannot be charged with any lack of due diligence in their efforts to solve this problem and to keep their operations up to the highest known state of the art.

ARGUMENT.

POINT I.

The bill and the proof wholly fail to establish such a condition as would give this Court jurisdiction of the subject matter of this litigation.

The demurrers of the defendant having been overruled by the Court without prejudice we assume that the question of jurisdiction is open for discussion, and we will discuss that question upon all the proofs under two heads.

FIRST:

The State of Georgia has not made out in her bill nor in her proof, such a state of facts showing such direct interest in this controversy as entitles her under the Constitution of the United States to maintain this action to redress supposed wrongs done to her domain. The allegations of the bill and the proof, so far as they deal with the direct interest of the State of Georgia, are limited to the following subjects:

(*A.*) Loss of revenue.

(*B.*) Injury to public roads.

(*C.*) Injury to streams.

SECOND:

The State of Georgia, in her bill and in her proof, shows no such state of facts as to entitle her to maintain this suit in her sovereign capacity as parens patriæ, trustee, guardian or representative of her citizens. The allegations of the bill and the proof in so far as they deal with the right of Georgia

to maintain this bill on behalf of her citizens, are limited to the following subjects:

(*A.*) Injury to health of citizens of Georgia.

(*B.*) Injury to property of citizens of Georgia.

FIRST.

Is there a controversy within the meaning of the Constitution of the United States, arising directly between the State of Georgia and these defendants?

(*A.*) THE THREATENED REDUCTION OF TAXABLE VALUES DOES NOT CREATE A DIRECT INTEREST IN THE CONTROVERSY, BUT AT MOST A REMOTE INTEREST. THE PROOF DOES NOT SUPPORT THE ALLEGATIONS OF THE BILL.

The power of taxation is an incident of sovereignty and not a property right.

Cooley on Taxation, 3d Ed., p. 7.
McCulloch *vs.* Maryland, 4 Wheat., 316-428.
Bank *vs.* Billings, 4 Peters, 514.
Case of Freight Tax, 15 Wall, 278.

There is no feature of this litigation involving the question of any interference with the power of taxation as such. Let it be supposed that an actual injury is being done to property of citizens within the State of Georgia by the operation of these copper plants within the State of Tennessee, and that that injury within Georgia is done by and with the consent of the citizens of Georgia on account of compensation being paid to them for the injury or otherwise. It certainly could not be contended by the State of Georgia that on account of a decreased value to the property of its citizens it can prevent a continuance of the operations doing the injury. It may be contended in this case that there is no such consent and that there is no condition upon which

consent could be even supposed or presumed, but it seems to us that the question of consent of its citizens would not be the test in this case; that the test is the simple question of whether the State of Georgia owns such interest in the property of its citizens on account of its power of taxation as to prevent the reduction of the value of that property by any sort of means. If the rights of the State depended upon assent or objection by its citizens then the jurisdiction of this Court would of necessity hinge upon that assent or objection, which manifestly is not the intent and purpose of the Constitution of the United States, conferring upon this Court jurisdiction of cases in which a State is party plaintiff with direct interest, and manifestly the qualification of the question upon which jurisdiction depends would place the question in this case in a directly antagonistic position to the same questions involved in the case of New York and New Hampshire *vs.* Louisiana, 108 U. S., 76, in which the Court said that it would look back of the pleadings and beyond the mere statement of fact that a State is a party plaintiff, in order to determine whether or not the interests of the State are such as to give this Court jurisdiction.

Another example of this proposition is that if the State is right in its contention that it can prevent the reduction of values within its territory, then an action would lie to prevent reduction of value of property injured in Georgia by the person owning that property. In some parts of Georgia there are timber interests of greater or less value and magnitude and lumber operations are being conducted on some scale. The question would naturally arise whether or not a State would have the power to prevent the reduction of the value of the assets of its citizens in some court, or of non-residents owning property within its borders in this court. Manifestly it would have no such right because while the State might have the right to levy and collect taxes in order to make possible the car-

rying out of its sovereign obligations and duties to its citizens, the right of taxation is not a vested property right to the extent that the State has a direct interest in the property taxed. Let us suppose the tax rate to be one per cent. The amount to be realized by a levy of one per cent. would be in no sense an interest of the State in the item assessed for taxation, though an interest might become vested after assessment, levy or collection, and for any reduction of the tax after collection and after the State of Georgia shall have become vested in its rights, undoubtedly a bill would lie.

It is contended neither in the bill nor in the proof that the defendants are interfering with the power of taxation as such, the position being merely that because the property of certain citizens of Georgia is injured, that the taxable value of said property is being reduced, and that, therefore, the public revenue of the State of Georgia derived from taxing said property will be reduced. If this proposition be correct as a matter of law, then the State of Georgia might in her courts enjoin any conduct on the part of her citizens that would tend to reduce the value of property within her borders, as, for instance, cutting timber, or removing minerals from the ground, or the removal of property or of anything of value from her territory because of the diminution of her income. As a matter of fact, however, the proof conclusively demonstrates that there has been no such reduction of taxable values nor of revenue income as is alleged in the bill. Instead of decreasing, the taxable values in the five counties named have increased approximately $1,000,000 between the year 1897 and the date of the filing of the bill in this cause, and this increase is shown to be largely due to the influence of the operation of defendants, so that we submit that this fact, together with defendants' other proof that no injury is being done, shows that the allegations of the bill are not sustained, and therefore the State of Georgia cannot, on this ground, obtain jurisdiction.

(*B.*) THE ALLEGED INJURY TO THE PUBLIC HIGHWAYS OF THE STATE OF GEORGIA IS NOT ONLY VERY REMOTE AND TRIVIAL, BUT IS NOT SUSTAINED BY THE PROOF.

We submit that the proof discloses the fact that the roads are not injured, that they are in as good condition as the roads of any similar mountainous country, and that even the proof of the plaintiff shows by its strongest construction an injury of such trifling character as to be, under all circumstances of the case, of no consequence. It is submitted that the proof of the defendant overcomes the proof of the plaintiff in every respect, even as to this slight injury.

(*C.*) THE PROOF WHOLLY FAILS TO ESTABLISH THE ALLEGATIONS OF THE BILL WITH RESPECT TO INJURY TO STREAMS.

It appears from the proof that there has been absolutely no injury whatever to the streams of the territory under discussion; that with the exception of one small stream all the streams of this territory drain into and through the State of Tennessee, and that none of these streams are navigable.

The case of Kansas vs. Colorado, 185 U. S., 125, is clearly distinguishable from the case at bar. It is a suit to enjoin the diversion of the waters of a navigable stream and the practical destruction of the stream, in which the State of Kansas has a direct and proprietary interest. Of these species of property according to the law of nature and nations there is and can be no private ownership, but ownership is in the State as representative of the public.

3rd Kent's Commentaries, p. 445.

This discussion is applicable to both the Missouri vs. Illinois and Kansas vs. Colorado cases. In the nature of things there can be no individual proprietary rights in such streams as the Mississippi and

the Arkansas Rivers. They are necessarily the property of the public, whose interests therein are founded in natural right.

Kansas vs. Colorado is further distinguishable upon these grounds:

(1). Direct property interests of the State of Kansas were involved, it being alleged that plaintiff State owned a soldier's home situated on the banks of the river, which would be injured by the diversion of the water.

(2.) It was alleged that the acts complained of were being done by, and under the direct authority of the State of Colorado.

(3.) The private parties injured were without remedy save in this court and through the intervention of their State, because a sovereign State was the defendant.

SECOND.

Does the State of Georgia allege and prove such a state of facts as would entitle her to prosecute this suit as parens patriæ, trustee, guardian or representative of her citizens?

(*A.*) THE BILL ALLEGES INJURY TO THE HEALTH OF THE CITIZENS, THOUGH THE PROOF OF THE PLAINTIFF UTTERLY FAILS TO SUPPORT THIS ALLEGATION.

It is submitted that the entire proof of the defendants demonstrates beyond all question that the health of the citizens is not injured. The only reference made in any of the proof for the plaintiff with respect to the effect of the fumes upon human beings is the general statement made that the fumes could be detected by their unpleasant odor. This proof does not support the allegation of the bill with respect to the injury to the health, a mere matter of

inconvenience to a few of the citizens of Georgia being wholly insufficient to warrant the broad allegation of the bill with respect to the substantial undermining of the health of the citizens. The question of jurisdiction in the case of Missouri *vs.* Illinois, 180 U. S., 208, is clearly distinguishable from the question of jurisdiction in this case on the following grounds:

(1.) The injury alleged in that case was being done, or about to be done, under the direct authority of the State of Illinois through its sanitary officers.

(2.) The means through which the damage was effected was a navagable stream in which the State of Missouri had a proprietary interest.

(3.) The health and comfort of the citizens of the entire State of Missouri was threatened.

(4). The citizens injured had no remedy for the injuries threatened either at law or in equity, except in this Court, and at the suit of their State, the State of Illinois not being subject to suit by private individuals.

The Court in its opinion said (p. 241):

> "An inspection of the bill discloses that the nature of the injury complained of is such that an adequate remedy can only be found in this Court at the suit of the State of Missouri."

In the case at bar not only have the parties injured a full, adequate and complete remedy at law, but they have open to them the same remedy which the State of Georgia is attempting to pursue in this Court in their behalf, to wit, they may invoke the injunctive power of a court of equity either in the courts of Tennessee, or in the United States Circuit Courts.

It is no answer to say that the courts of Tennessee in the exercise of their discretion deny the

injunction and confine the injured parties to their remedy at law. The remedy lies just the same whether it can be effectuated or not. Certainly no such excuse can be made for not proceeding in the names of these injured parties in the United States Circuit Courts.

This Court further said (p. 241):

> "The health and comfort of the large communities inhabiting those parts of the State situated on the Mississippi River are not alone concerned, but contagious and typhoidal diseases introduced in the river communities may spread themselves throughout the territory of the State. Moreover, substantial impairment of health and prosperity of the towns and cities of the State situated on the Mississippi River, including its commercial metropolis, would injuriously affect the entire State."

We think it is quite clear from this that the entire citizenship of the complaining State must be affected as a prerequisite to a suit by a State in its representative capacity. If the State can sue for a few individuals inhabitating an isolated community, why may it not sue for two or three individuals, or why may it not take up the claim of one individual affected? We think it quite clear that the entire gist of the decisions of this Court is to the effect that to entitle a State to sue by virtue of its sovereignty and as a representative of its citizens, the injury threatened or being done must be general and to the entire citizenship of the State.

Judge Story so construes the section in his work on the Constitution, Vol. 2, Sec. 1638, when he says:

> "8. To controversies between a State and citizens of another State: because, in case a State (that is, all the citizens of it) has demands against some citizens of another State, it is better that she should prosecute their demands in a national court than in a court of the State to which those citizens belong," &c.

He further states in the same volume, Sec. 1685:

> "It is not sufficient that it may have an interest in a suit between other persons, or that its rights, powers, privileges or duties come therein incidentally in question. It must be in terms a plaintiff or defendant, so that the judgment or decree may be binding upon it, as it is in common suits binding upon parties and privies."

Another distinction is: the injury threatened and being done in Missouri *vs.* Illinois was to the health and comfort of the citizens of the State of Missouri. Whereas the injury, if any, being done to the few citizens of Georgia who live in the counties named is injury to property, compensation for which can be accurately approximated.

A decree in this case on the merits would not be binding upon the citizens of those communities for whom the State of Georgia is assuming to act. Suppose upon the hearing it should be held that plaintiff is not entitled on the facts to the relief sought, the parties in whose interest Georgia is assuming to act might immediately sue for the same relief in the courts of Tennessee or the United States Circuit Courts, and the decree in this case would not be *res adjudicata* as to them.

This also furnishes a strong ground for the position that a State may not sue in its representative capacity when the parties may themselves adopt the identical remedy in another forum.

Public policy requires that litigation should have a speedy end, and courts will not take jurisdiction of controversies when their decrees will not be final and binding upon the parties and their privies.

(*B.*) NEITHER THE BILL NOR THE PROOF SHOWS SUCH INJURY TO THE PROPERTY OF CITIZENS AS TO ENTITLE THE STATE TO MAINTAIN THIS SUIT ON BEHALF OF CITIZENS.

The plaintiff's proof, by its strongest construction with respect to the injury to the property of the

citizens of the State of Georgia, shows no condition of injury to property of citizens which is not susceptible of accurate approximation. All of the proof of plaintiff, where injury is shown to have occurred, demonstrates clearly, first, that the citizens could be fully compensated in damages for injury, if any, which they may have sustained; and, second, that if their injuries could not be estimated and their compensation fixed in damages, no reason is shown why they would not be entitled to the same relief which is being sought in their behalf by the State.

As was said by the Court in Wisconsin *vs.* Insurance Co., 127 U. S., p. 289:

> "The grant is of 'judicial power,' and was not intended to confer upon the courts of the United States jurisdiction of a suit or prosecution by the one State of such nature that it could not under principles of public and international law be entertained by the judiciary of the other State at all."

In other words, a grant is not of some special power or privilege, but the privilege of enforcing certain rights as a litigant in this court.

The language of this Court in New Hampshire *vs.* Louisiana, 108 U. S., 76, is very pertinent:

> "But is is said that even if a State as sovereign trustee for its citizens, did surrender to the National Government its power of prosecuting the claims of its citizens against another State by force, it got in lieu the constitutional right of suit in the national courts. There is no principle of international law which makes it the duty of one nation to assume the collection of the claims of its citizens against another nation, if the citizens themselves have ample means of redress without the intervention of their government. Indeed Sir Robert Phillimore says, in his Commentaries on International Law, Vol. II., 2d Ed., page 12: 'As a general rule the proposition of Martens seems to be correct, that the foreigner can only claim to be put on the same footing as the native

> creditor of the State.' Whether this be in all respects true or not, it is clear that no nation ought to interfere, except under very extraordinary circumstances, if the citizens can themselves employ the identical and only remedy open to the government if it takes on itself the burden of prosecution. Under the Constitution, as it was originally construed, a citizen of one State could sue another State in the courts of the United States for himself and obtain the same relief his State could get for him if it should sue. Certainly when he can sue for himself there is no necessity for power in his State to sue in his behalf, and we cannot believe it was the intention of the framers of the Constitution to allow both remedies in such a case" (pp. 90-91).

The Court further held that the amendment taking away the right of the citizen to sue another State in this Court gave him no additional rights, saying:

> "Nothing was added to the Constitution by what was thus done. No power taken away by the grant of the special remedy was restored by the amendment."

The above quotation states in much clearer language than we could state one of our positions with reference to this matter: that is, that in no case would a State in its sovereign capacity be permitted to prosecute a suit as *parens patriæ*, trustee, guardian, or representative of her citizens, in this court, when such citizens have full, adequate and complete remedy in another forum, and might there prosecute such claims for themselves.

Another prerequisite is that the entire body of the citizens of the complaining State should be affected.

In Louisiana *vs.* Texas, 176 U. S., in the opinion of Mr. Justice Harlan, it is stated (p. 24):

> "But I am of the opinion that the State of Louisiana in its sovereign or corporate capacity cannot bring any action in this court on account of the matters set forth in its bill.

> * * * Citizens of the complainant State may, in proper cases, invoke judicial protection of their property or rights when assailed by the laws and authorities of another State; but their State cannot, even with their consent, make their case its case and compel the offending State and its authorities to appear as defendants in an action brought in this court."

Mr. Justice Brown, concurring, says:

> "I am not prepared to say that if the State of Texas had placed an embargo upon the entire commerce between Louisiana and Texas, the State of Louisiana would not be sufficiently representative of the great body of her citizens to maintain this bill."

In other words, as was said by this Court in the case of *In re* Debbs, 158 U. S. (p. 564):

> "It is obvious from these decisions that while it is not the province of the Government to interfere in any mere matter of private controversy between individuals, or to use its great powers to enforce the rights of one against another, yet whenever the wrongs complained of are such as to affect the public at large and are in respect of matters which by the Constitution are intrusted to the care of the nation, and concerning which the nation owes the duty to all the citizens of securing to them their common rights, then the mere fact that the Government has no pecuniary interest in the controversy is not sufficient to exclude it from the courts, or to prevent it from taking measures therein to fully discharge its constitutional duties" (p. 568).

We submit that upon the question of jurisdiction the State of Georgia has wholly failed to show by the proof in this record such a condition of facts as to entitle her in her own name to the relief sought. She has not shown interest of such character in the State of Georgia as a State to warrant her in the

filing of this bill. Upon the question of the character of interest required in the State to entitle it to maintain an original action in this Court, this Court as early as 1799, in the case of Fowler *vs.* Lindsey, 3 Dallas, 411, said:

> "A case which belongs to the jurisdiction of the Supreme Court on account of an interest that a State has in the controversy, must be a case in which the State is either nominally or substantially a party. It is not sufficient that a State may be consequentially affected, for in such case, as where the grants of different States are brought into litigation, the Circuit Court has clearly a jurisdiction, and this remark furnishes an answer to the suggestions that have been founded on the remote interest of the State in making retribution to her grantees upon the event of an eviction."

The language of this Court in Pennsylvania *vs.* Wheeling Bridge Co., 13 Howard, 557, is peculiarly applicable. The Court said:

> "In this case the State of Pennsylvania is not a party in virtue of its sovereignty. It does not come here to protect the rights of its citizens. The sovereign powers of a State are adequate to the protection of its own citizens, and no other jurisdiction can be exercised over them or in their behalf, except in a few specified cases; nor can the State prosecute this suit on the ground of any remote or contingent interest in itself. It assumes and claims not an abstract right, but a direct interest in the controversy, and that the power of this Court can redress its wrongs and save it from irreparable injury. If such a case be made out, the jurisdiction may be sustained.
>
> "When a State enters into a copartnership or becomes a stockholder in a bank, or other corporation, its sovereignty is not involved in the business, but it stands and is treated as other stockholders or partners; and so in the present case, the rights asserted and relief prayed are considered as in no respect different from those of individuals. From the

> dignity of the State the Constitution gives to it the right to bring an original suit in this Court, and this is the only privilege, if the right be established, which the State of Pennsylvania can claim in the present case."

In other words, in order to prosecute an original suit in the Supreme Court, a State must show just such interest in the controversy in question as an individual must show in order to maintain a suit in a proper jurisdiction, and that it is the dignity of the State rather than the character of the controversy which entitles it to come into this Court by original proceeding.

In the case of New Hampshire *vs.* Louisiana, 108 U. S., pp. 76 *et seq.*, it was held that the State is not entitled in an original proceeding in this Court to prosecute claims of its citizens against another State.

In the case of Wisconsin *vs.* Pelican Insurance Company, 127 U. S., p. 289, this Court used this language:

> "As to 'controversies between a State and citizens of another State' the object of vesting in the Courts of the United States jurisdiction of suits by one State against the citizens of another was to enable such controversies to be determined by a national tribunal and thereby to avoid the partiality, or suspicion of partiality, which might exist if the plaintiff State were compelled to resort to the Courts of the State of which the defendants were citizens. (Federalist No. 80, Chief Justice Jay in Chisholm *vs.* Ga., 2 Dall., 419–475; Story on the Constitution, Sec. 1638–1682). The grant is of 'judicial power' and was not intended to confer upon the Courts of the United States jurisdiction of a suit or prosecution by the one State of such a nature that it could not on the settled principles of public and international law be entertained by the judiciary of the other State at all."

We think that this language conclusively establishes the correctness of the contention that the

purpose of the provision of the Constitution under discussion was simply to allow the State to select this forum by virtue of its dignity as a State, and to prosecute suits here instead of being compelled to prosecute same in the State of the residence of the parties defendant.

As stated by Mr. Chief Justice Marshall, in Cohens *vs.* Virginia, 6 Wheat., 264, in discussing this question:

> "In one description of cases, the jurisdiction of the court is founded entirely on the character of the parties, and the nature of the controversy is not contemplated by the Constitution. The character of the parties is everything, the nature of the case nothing."

The case of Louisiana *vs.* Texas, 176 U. S., pp. 1 *et seq.*, is peculiarly in point. This Court said (p. 16):

> "In order then to maintain jurisdiction of this bill of complaint as against the State of Texas, it must appear that the controversy to be determined is a controversy arising directly between the State of Louisiana and the State of Texas, and not a controversy in the vindication of grievances of particular individuals."

The Court further says (p. 22):

> "But in order that a controversy between States justiciable in this court can be held to exist, something more must be put forward than that the citizens of one State are injured by the mal-administration of the laws of another. The States cannot make war or enter into treaties, though they may with the consent of Congress make compacts and agreements. When there is no agreement whose breach might create it, a controversy between States does not arise unless the action complained of is State action and acts of State officers in abuse or excess of their powers cannot be laid hold of as in themselves committing one State to a distinct collision with a sister State."

Further the Court says:

> "The word 'controversies' in the clauses extending the judicial powers of the United States to 'controversies between two or more States' and to 'controversies between a State and citizen of another State,' and the word 'party' in the clause declaring that this court shall have original jurisdiction of all cases in which a 'State shall be a party' refer to controversies or cases that are justiciable as between the parties thereto, and not to controversies or cases that do not involve either the property or powers of the State which complains in its sovereign or corporate capacity that its people are injuriously affected in their rights by the legislation of another State. The citizens of the plaintiff State may in proper cases invoke judicial protection of their property or rights when assailed by the laws and authority of another State, but their State cannot even with their consent make their case its case and compel the offending State and its authorities to appear as defendants in an action brought in this court. If this be not so, we were wrong in New Hampshire *vs.* Louisiana, 108 U. S., p. 76, in which case it was held that one State could not by taking charge of demands or debts held by its citizens against another State acquire the right to bring a suit in its name in this court against the debtor State."

In the case of California *vs.* Sou. Pacific Co., 157 U. S., 261, this Court said:

> "The jurisdiction is limited and manifestly intended to be sparingly exercised and should not be expanded by construction."
>
> It is insisted on behalf of this defendant that this court should exercise jurisdiction only in a case where the jurisdictional facts appear in the pleadings and are sustained by the proof.

We submit that if the evidence be conflicting and the jurisdictional facts be doubtful that the conflict and doubt should be a ground for declining jurisdiction.

In its proof Georgia has failed to sustain by the weight of the evidence the allegations of the bill on any of those material questions necessary to give to this Court jurisdiction of this cause.

We beg to call the Court's attention to the fact that it is insisted by the defendants that under the proof in this record there has been eliminated from consideration every question except the question of the extent and amount of injury to the property of private citizens. The proof has not shown any right by the State of Georgia to maintain this bill in its own name on its own behalf, and we insist that it is now in the attitude of endeavoring to obtain the relief prayed, not on account of injury which has been, is being, or may in the future be done to interests of the State of Georgia, but simply on account of an alleged injury as against the property of her citizens.

And it would be no answer to say that the State of Georgia would be entitled to institute this suit in this court under the doctrine of *parens patriæ* simply on account of the fact that numerous suits would be necessary by its citizens in their actions to obtain relief at law or in equity for injuries inflicted; for so long as those citizens have the courts of both law and equity open to them, the State could not seek for them the same rights to which they themselves would be entitled in their own behalf. If the question of jurisdiction should resolve itself into the simple proposition that the right would be delegated to the State in order to prevent a multiplicity of actions, then the State would have the right distinctly decided against it in the case of New Hampshire *vs.* Louisiana, and there would be no case which could be imagined where the State could not seek to enforce the rights of several of its citizens against non-residents of the State of Georgia in this court. As an example, in cases of assignments of commercial enterprises, or in cases of general creditors' bills filed against such enterprises in foreign States, the State of Georgia might intervene on

behalf of those of the creditors of such enterprises as may happen to be citizens of the State of Georgia, and it seems to us that this right in such an event would be limited only by the limitations upon the number and variety of litigations of similar character which could be imagined. If the citizens of the State of Georgia alleged to be injured should not desire injunction as a remedy, but should only desire damages in compensation, the State might with equal propriety attempt to collect the claims of its various citizens through the medium of this Court, so that the jurisdiction of this Court would be by such extension expanded beyond the contemplation of the Constitution of the United States.

Counsel for the State of Georgia in their position in this case with respect to nuisance confuse public nuisance as distinguished from private nuisance. They go on the assumption that where the property of a number of private citizens is injured that of itself makes a public nuisance on the theory that numbers would control, and distinguishing injury to a few private citizens as private nuisance and injury to many private citizens as public nuisance. We submit that the true definition and the true rule is that private nuisance is one that affects a single individual or a determinate number of persons *in the enjoyment of some private right not common to the public.*

Bohan *vs.* Port Jervis Gas Light Co., 122 N. Y., 18.
Am. & Eng. Enc. of Law, 2nd Ed., Vol. 21, 683.

A common or public nuisance is one which affects the people at large and *is a violation of a public right*, either by a direct encroachment upon public property or by doing some act which tends to the common injury, or by omitting to do in the discharge of a legal duty that which the common good requires.

Bohan *vs.* Port Jervis Gas Light Co., 122 N. Y., 32.
State *vs.* Wolf, 112 N. C., 889.

In the former case it was said:

> "Public nuisances are founded upon wrongs that arise from the unreasonable, unwarrantable or unlawful use of property, or their improper, indecent or unlawful conduct, working an obstruction or injury to the public and producing material annoyance, inconvenience and discomfort. Founded upon a wrong it is indictable and punishable as for a misdemeanor."

In the case of State *vs.* Wolf, 112 N. C., 889, citing first Bishop's Criminal Law, Section 1266 and Section 245, and citing State *vs.* Smith, 86 N. C., 681, the distinction is made that the guilt or innocence of one charged with a nuisance in obstructing a public road or creating odors that are unwholesome or disagreeable to those that travel along it, depends not on the question whether all the neighborhood are accustomed to travel it, but whether they have the right to use it as a highway. This distinction is in exact accord with the distinction we have endeavored to make hereinbefore, and that is, that the question of public or private nuisance does not hinge upon and is not determined by the question of numbers pro or con, but that it depends solely upon the character of the right invaded, *i. e.*, whether it be a public right of one or many citizens, or whether it be a private right of one or many citizens. It is the rule that all private persons, whether one or a dozen, or any other number, having separate tenements are injured by a private nuisance common to all, they may join as plaintiffs in a bill filed to abate the nuisance, though they could not join in a common action for damages.

Rowbotham *vs.* Jones, 47 N. J. Equity, 337, and authorities cited.
14 Enc. Pleadings and Practices, 1138.

This has been decided to be the rule in the States of Indiana, Kansas, Michigan, New York, Ohio, Texas, West Virginia, Wisconsin, and is undoubt-

edly the rule at common law. It is a rule too well established to require citation of authority that a public nuisance can be abated by a suit by a private citizen only when such private citizen shows special injury, so that irrespective of the question of numbers we submit that the question is determined by and necessarily turns upon the question of the character of the right invaded. We submit that it is equally true that while a private citizen when he shows special injury may abate a public nuisance, that in the absence of special injury he cannot abate a public nuisance because a public nuisance being founded upon a wrong, being indictable and punishable as for a misdemeanor, would be subject to abatement alone at the hands of the State; and it is equally true that the State has no right to endeavor to abate private nuisance which is not unreasonable, unwarrantable or unlawful, and, hence, not being founded upon a wrong is not indictable or punishable as for a misdemeanor.

Under the proof in this case it appears that the public rights of the citizens of the State of Georgia are not injured, that the roads are not injured, that public health is not impaired, that public revenues are not reduced, that public streams are not affected, so that this suit resolves itself into the question of the effect of injury, if any, upon the citizens of the State of Georgia by reason of the alleged number of those citizens. At this point we also beg to call the Court's attention to the assumption by counsel for plaintiff, that because of the alleged injury the conduct of defendants constitutes by natural result a nuisance *per se*. We submit that any business lawful in itself cannot be a nuisance *per se*. We concede that there are differences in the authorities on this question, but the reasonable rule, we submit, is that a lawful business having the right to exist somewhere cannot by the very nature of things be a nuisance *per se*. This view of this question has been taken by the Supreme Court of the State of

Georgia, in the case of Bacon *et al. vs.* Walker *et al.*, Commsrs., 77 Ga., 336, in which the Court said:

> " Nothing that is legal in its erection can be a nuisance *per se, much less can that which public necessity demands be one.*"

POINT II.

The proof as to the injury alleged by the bill is not only doubtful but preponderates in favor of defendants.

The proof in the record in this case demonstrates beyond doubt that the bill was filed under a misapprehension of the existing conditions. The proof demonstrates that due to these misapprehensions with regard to each and every of the material allegations of the bill, the conditions described were greatly exaggerated, and with respect to those allegations of the bill it is insisted that the proof in the record preponderates in favor of the defendant.

It will probably be insisted by the plaintiff that the evidence in the record shows a decided condition of injury, and undoubtedly this injury plaintiff ascribes as being of recent occurrence and due wholly to sulphur fumes. But it is submitted that in viewing the evidence of the defendant with the evidence of the plaintiff and in the light of the history of the copper operations, the record shows an entirely different state of facts.

We submit that the record shows that in most instances the affidavits for plaintiff are based in their statements upon conditions which have existed in and around the Ducktown District since the year 1849, and the causes of which have now been removed.

It is shown by the only proof in this record on that question, that the operations complained

of were begun in the year 1849, that they continued from that time down to the year 1879, that then an intermission occurred and operations were abandoned until about the year 1890, when operations were again resumed and have been continuous since that year. It is submitted that any injury which may have been done to the territory of Georgia lies in that part of the County of Fannin immediately adjacent to the State line and within a very short distance of the smelter operations of the defendants, and that the conditions there prevailing do not consist of actual or real injury. It appears from the proof that this adjacent country was many years ago denuded of timber for the purposes of aiding in the operations of the defendants, the timber being used either for charcoal purposes or for fire-wood, mine timbers and supports, or any of the various uses incident to mining operations. Plaintiff's witnesses take for granted that when they see the territory adjacent to the smelter plants of the defendants denuded of its timber that the country is a desert waste, that the soil is sterile, and they assume that this condition is due directly to the sulphur fumes – losing sight, we insist, of the appearance given to the country by the operations of many years ago, and also losing sight of the fact that all of the timber of that territory has long since been consumed in those operations. We submit that the statement that the soil is made sterile by sulphur fumes, or that the crops native to the country cannot be raised upon the lands, is not true, and that the officials and attorneys for the State of Georgia and their witnesses are laboring under a misapprehension in this view of this controversy. It is stated by every witness for the defendants, who makes any statements with respect to the matter, that the country will and does still produce within the territory alleged to be devastated, as good crops as its soil is capable of producing. We desire to call the Court's particular attention to photograph No. C–27 of the volume of

photographs filed as exhibit to the affidavit of Arthur H. Case, which, according to his affidavit, was taken 4 1/2 miles Northeast of the Tennessee Copper Company's smelter in North Carolina. As a matter of fact, this point is only about 1 1/2 miles from the smelter plant of the defendant Ducktown Sulphur, Copper & Iron Company, Limited. The adjacent country in the photograph appears to be a barren waste, and yet in the little plot of cultivated ground in front of the cabin it will be seen that there is a little garden, and surrounding the house is a field of healthy, thriving, growing corn. It is submitted that this photograph bears out the statement made by every witness for the defendant who is acquainted with the facts, to the effect that the growing timber for miles in every direction from the smelter was cleared in the years passed, for the purpose of making charcoal for use in smelting the ores under the old process, and it bears out the statements of the witnesses who are acquainted with the facts, to the effect that this region, irrespective of sulphur fumes and vapors, is still capable of producing all of the crops which its soil would ever produce.

While it is true that the proof in this case shows that there are dead trees in the northern part of the State of Georgia, in some of the counties covered by the allegations of the bill, the proof also shows that there is more dead timber in other counties far remote from the copper operations, than in the counties claimed to be affected by those operations. The affidavits of G. C. Parks and M. T. Fouts hereinbefore mentioned conclusively show this condition and no pretense is made by plaintiff's witnesses to deny their statements. It is further shown by the proof in the affidavit of Jno. M. Clancy, that in every instance where complaint was made by the citizens of the State of Georgia of the condition of timber, in the neighborhood of Ducktown, it was found upon examination that the injury was not due to the sulphur fumes, but was due to other

causes, principally fire and to *Dendroctonus frontalis*, a bark beetle, which is known to be the chief insect enemy of the pine species in the United States. It is further shown by C. A. Schenck, Walter J. Mosenthal and by all of the other witnesses who are acquainted with the facts, that the injury to the shrubbery and undergrowth in the forests of Georgia was due to fires which are started by the natives of these counties, either for the purpose of gathering chestnuts or for the purpose of bettering the pasturage for cattle, so that it is insisted that not only is there doubt with respect to the cause of the conditions alleged, but that the evidence preponderates in favor of the defendant.

We submit that an injunction to restrain a nuisance will issue only in a case where the fact of the nuisance is made out upon determinate and satisfactory evidence. If the evidence be conflicting and the injury be doubtful, that conflict and doubt will be ground for witholding the injunction. If there is any reasonable doubt as to the existence or cause of the injury, the benefit of the doubt will be given to the defendant, if his trade is a lawful one and the injury is not the necessary and natural consequence of the act; as in all actions of this nature, the burden of proof is upon the plaintiff.

Wood on Nuisance, 3rd Ed., Vol. 1, p. 732.

The evidence upon which a court will perpetuate an injunction must clearly establish the essential allegations of the bill, the burden of proof being on the complainant. And where the evidence consists only of the opinion of witnesses, there being great contrarity of opinion, it will not suffice to make an injunction perpetual.

High on Injunctions, 4 Ed., Vol. 1, Sec. 870.

In the case of Missouri *vs.* Illinois (200 U. S., p. 521) this Court said:

> "Before this Court ought to intervene the case should be of serious magnitude, clearly and fully proved, and the principle to be applied should be one which the Court is prepared deliberately to maintain against all considerations of the other side."
>
> Citing Kansas *vs.* Colorado, 185 U. S., 125.

The Character of the Proof.

It will be observed from an examination of the record in this case that the entire evidence for final hearing consists of the affidavits filed by the various parties on the preliminary questions, it having been stipulated by each of the parties interested that no further proofs would be taken. This stipulation did not have the effect in any sense of conceding the truth or accuracy of the statements as made on either side by any witness, and did not concede that the situation as presented by the proof of either side was the true situation—the effect of the stipulation being simply that the affidavits as filed could be taken for what they might be worth. In passing, it may be said, we think, without impropriety, that proof of this character is universally unsatisfactory. An examination of the affidavits filed by the State of Georgia confirms the statement that proof by affidavit is usually more or less inaccurate, and in this particular case we desire to call the Court's attention to the method of procuring the affidavits for the State of Georgia as shown on the face of the record. It appears upon examination that, instead of making up the statements of the witnesses as those statements were obtained, thus showing the understanding of each particular witness, almost all of the affidavits signed on behalf of the State of Georgia with respect to injury were printed in form, and were circulated and signed

after having been printed. This is true of all of the affidavits of citizens as to general conditions on October 1, 1906, with the exception of eleven such affidavits, in the entire volume. It also appears that the affidavits of the witnesses signing those printed forms were made under misapprehension of the contents of the affidavits and of the object of the suit.

We submit to the Court that it is a matter of common knowledge that men are more inclined to sign prepared printed forms having the appearance of petitions, or of blanket affidavits, than would be the case where the statements of those men were written down, gone over by the parties present, corrected after preparation and then signed under oath. An examination of the original affidavits in the record will not fail to convince the Court of the fact that there is doubt as to the effect upon the situation of the operations complained of, and it is with that doubt as shown by the record that it is submitted that the plaintiff has not made out its case.

POINT III.

The State of Georgia is estopped both in law and equity to seek injunctive relief in this cause:

(*a.*) By her laches.

(*b.*) By her long acquiescence in the operations she now seeks to enjoin.

(*c.*) By her consent, agreement to, and insistence upon, the adoption of the present method of pyrite smelting and the high stack erected in connection therewith and lately put into operation.

It is shown by the affidavit of G. G. Hyatt, on pages 90 and 91 of the affidavits in support of argument of defendant Tennessee Copper Company, filed in this cause on April 23, 1906, that copper was discovered in the Ducktown district about the year 1849. Operations were begun in 1850, and were carried on continuously, with a slight intermission during the Civil War, until about 1879. During the period of operation hundreds of people were directly dependent upon the workings of the copper mines. The operations had been carried on by Captain J. E. Raht, who was later succeeded by E. G. Duvall, who, for the Union Consolidated Mining Co., continued operations until the year 1878, when that company suspended operations and went into the hands of a receiver, who continued the operations during the year 1879, and then ceased. Operations were begun by the Ducktown Sulphur, Copper and Iron Company (Limited) about the year 1891. The Pittsburg and Tennessee Copper Company began its operations about the year 1892, and continued until it was succeeded by the Tennessee Copper Company in 1899, which company, together with the Ducktown Sulphur, Copper and Iron Company (Limited) have been continuously operating until the present day.

On page 92 he says when the Ducktown Sulphur, Copper and Iron Company (Limited) commenced preparations for operations in the year 1890 the news became noised about among the inhabitants of the territory adjacent to the mining region and was hailed with joy by all the people. To these people it meant the return of days of prosperity, and from all the mountain regions for miles around people flocked into Ducktown seeking employment, until there has now grown up a thriving, prosperous contented community where labor may find employment, where work is abundant and where want is unknown. To this affiant's knowledge there are no people in that community who are or need be in the

destitute condition which is usually found in other communities of the size.

At the time the bill was filed in this cause, at the October Term, 1905, the copper operations in this district had been in progress continuously for fifty-five years, with the exception of what is known as "the period of suspension"—from the close of 1879 until about the year 1890—when the Ducktown Sulphur, Copper and Iron Company (Limited) began its operations. Following that period of suspension the operations have been continuous from 1890 up to the filing of the bill in this cause; that is fifteen years. The Tennessee Copper Company made its investments, purchasing the property and the operations of the Pittsburg and Tennesee Copper Company, in 1899, after the Pittsburg and Tennessee Copper Company had been in operation about eight years.

Irrespective of the millions of dollars invested in the operations of these defendants and of their vested rights in their properties, we submit that the State of Georgia is estopped from seeking the injunctive relief prayed in the bill on account of the injurious effect which such an injunction would have upon the communities established by these operations. Not only has the acquiescence and laches of the State of Georgia permitted the defendants in this case to make their investments, depending upon the fact that no complaint having heretofore been made by the State of Georgia, no complaint would be made; but the State of Georgia, by sleeping upon her rights, if any rights she may have had, has allowed the community to become built up; has allowed prosperous and thriving towns and cities to be created; has allowed thousands of people to acquire their homes and make their investments and establish their family and social ties with the feeling of security against complaint by the State of Georgia as to these operations.

The question of laches does not depend as does the Statute of Limitations upon the fact, that a certain

definite time has elapsed since the cause of action accrued but whether under all the circumstances of the particular case plaintiff is chargeable with a want of due diligence in failing to institute proceedings before he did McKnight *v.* Taylor, 1 How., 168; Badger *v.* Badger, 2 Wall., 87; Twin Lake Oil Co. *v.* Marbury. 91 U. S., 587; Haywood *v.* Elliot National Bank, 96 U. S., 611; Harwood *v.* Cincinnati & C. Air Line Co., 17 Wall., 79; Apeidal *v.* Henrici, 120 U. S., 377; Galiher *v.* Cadwell, 145 U. S., 368; Hammond *v.* Hopkins, 143 U. S., 224; Willard *v.* Wood, 164 U. S., 502; Sullivan *v.* Portland & K. R. Co., 94 U. S., 806; Lansdale *v.* Smith, 106 U. S., 391; Lane & B. Co. *v.* Lock, 150 U. S. 193; Mackall *v.* Casilear, 137 U. S., 556; Whitney *v.* Fox, 166 U. S., 637; Gildersleeve *v.* New Mexico Mon. Co., 161 U. S., 573; Ware *v.* Galveston City Co., 146 U. S., 102; Foster *v.* Mansfield, C. & L. M. H. Co., 146 U. S., 88; Hoyt *v.* Latham, 143 U. S., 553; Hanner *v.* Moulton, 138 U. S., 486; Richards *v.* Mackall, 124 U. S., 183; Roberts *v.* Northern P. R. Co., 158 U. S., 1. See also Wilson *v.* Anthony, 19 Barb. (Ark.), 16; Taylor *v.* Adams, 14 Barb. (Ark.), 62; Johnson *v.* Johnson, 5 Alabama, 90; Fuson *v.* Sanger, 2 Ware, 256; Fisher *v.* Boody, 1 Curtis, 219; Cholmondy *v.* Clinton, 2 Jac. & Walk., 141; Smith *v.* Clay, Ambler, 645; Johnson *v.* Standard Mining Co., 148 U. S. 360.

The Supreme Court of Tennessee, in the case of W. M. Madison *v.* Tennessee Copper Co., and Ducktown Sulphur, Copper & Iron Co., 113 Tenn. Rep., p. 338, said:

> "Prior to 1870 one Raht began the operation of the copper mine at Ducktown, and worked it for several years. Subsequently it was owned by the Union Consolidated Mining Company, Mr. Raht's successor. These operations were continued until the year 1879, and were then suspended until 1891. During the latter year the Ducktown Sulphur, Copper and Iron Company commenced operating the

properties formerly owned and operated by the Union Consolidated Mining Company, and has continued to operate them ever since. The Pittsburg and Tennessee Copper Co. began operations at Ducktown about the year 1881 (1891), and then continued until about 1899, when it sold out to the defendant Tennessee Copper Company. The latter began its operations in 1900, and commenced roasting ores in May, 1901. It has continued work ever since."

On pages 355–356 the Court further said:

> " We are of the opinion that the complainants in the first bill are estopped to claim equitable relief against the defendant thereto by their laches. It is clearly to be inferred from the facts by the Court of Chancery appeals, and above noted, that these complainants had been suffering the injuries now complained of for ten years when the bill was filed without making any complaint of them in any form. In the meantime the defendant had expended several hundred thousand dollars in making improvements in the plant, and the nature and source of the injury were such that the complainants could not be mistaken as to the cause or extent of it. Under such circumstances, we are of the opinion that it would be inequitable to grant the severe remedy of injunction, but that the said complainants should be left to their actions for damages."

The Court held that complainants in this case were guilty of laches, using the following language, and following citation of authority (pp. 351–352):

> " And the equitable remedy by injunction must be applied for with reasonable promptness. There must be no laches. Caldwell *vs.* Knott, 10 Yerg., 210, 212; W. J. Stamps *et al. vs.* W. H. Hartford *et al.*, MS., Nashville, December Term, 1898; Bassett *vs.* Company, 47 N. H., 438, 441; Goodal *vs.* Crofton, 31 Ohio

St., 271, 31 Am. Rep., 535; Whitney *vs.* Union Railway Co., 11 Gray (Mass.), 359, 71 Am. Dec., 715; Reid *vs.* Gifford, 6 Johns Ch., 19; Clifton Iron Co. *vs.* Dye, 87 Ala., 468–472, 6 Sou., 192; Traphagan *vs.* Jersey City, 29 N. J. Eq., 206; Morris, etc., Ry. Co. *vs.* Prudden, 20 N. J. Eq., 530; Sprague *vs.* Rhodes, 4 R. I., 304; Gray *vs.* R. Co., 1 Grant, Cas. (Pa.), 412; Stewart Wire Co. *vs.* Lehigh Coal & Nav. Co., 203 Pa., 479, 53 Atl., 352; Powers Appeal, 125 Pa., 186, 17 Atl., 254, 11 Am. St. Rep., 382; Dana *vs.* Valentine, 5 Metc. (Mass.), 8; Shelton *vs.* Rockwell, 9 Wis., 166, 76 Am. Dec. 262; Parker *vs.* Winnipiseogee Lake, etc.. Co., *supra;* Tuttle *vs.* Church, *supra;* Tuttle *vs.* Brightman (C. C.), 53 Fed., 429; Bankhart *vs.* Houghton, 27 Beav., 425; Great Western R. Co. *vs.* Oxford, &c., R. Co., 3 De G., M. & G., 341, 359–361; Williams *et al. vs.* Earl of Jersey, 1 C. R. & Ph. (18 Eng. Chan. Rep.), 91; Wood *vs.* Sutcliffe, 8 Eng. L. & Eq., 217, 2 Simmons (N. S.), 163; Weller *vs.* Smeaton, 1 Cox Cases in Eq., 102; Cooper *vs.* Hubbuck, 30 Beav., 160, 166, 167; Birmingham Canal Co. *vs.* Lloyd, 18 Ves., 515; Graham *vs.* Birgenhead, etc., Ry. Co., 48 Eng. Ch. Rep., 2 M. & G., 146; Atty. Gen. *vs.* Sheffield Gas Consumers Co., 3 De Gex, M. & G., 304, 52 Eng. Chan. Rep., 237."

In Clifton Iron Co. *vs.* Dye, 87 Ala., 471, it was held that standing by for three years without complaint would estop complainant. The Court said:

> "Clearly it was the duty of complainant to give the company some intimation of his objection, and not to stand by with full knowledge and permit it to make large outlays on these washers and then seek the aid of a court of equity to arrest their operations. Reasonable diligence in assertion of his rights was the measure of complainant's duty in this case, and failing in this he must now seek relief in a court of law for any damage he may have suffered."

A party who applies to a Court of Chancery for aid of its extraordinary powers must show himself to have been vigilant and diligent.

Dulin *vs.* Caldwell & Co., 28 Ga., 120.

"The vote of the town to do the work and to raise and appropriate the sum of $1,500 to pay for it was passed on the 2d of March, 1857, and it is alleged in the answer and conceded by petitioners that substantially the whole work had been done and an expense to the whole extent of the appropriation had been incurred upon the credit of the town before this petition was presented. We think these facts are decisive against the claim of petitioners for equitable relief, and that the case is clearly within the doctrine stated in Tash *vs.* Adams, 10 Cush., 252 (Mass.). It was said by the Court in that case that 'It is a well established rule in equity that if a party is guilty of laches or unreasonable delay in the enforcement of his rights he thereby forfeits his claim to equitable relief,' and that 'this rule is more especially applicable to cases where a party, being cognizant of his rights, does not take those steps to enforce them which are open to him, but lies by and suffers other parties to incur expenses and enter into engagements and contracts of a burdensome character."

Fuller *et al. vs.* Inhabitants of Melrose, 1 Allen, 166 (Mass.).

"If the object be to stop the erection or further operation of a large and costly work, it should appear that the application has been made as soon as the party became apprised of his right and the extent of the injury with which they were threatened, or at least it must not appear from the bill itself that there had been any expressed or tacit admission or acquiescence not properly accounted for. (Citing a number of English cases.) A court of equity frequently refuses an injunction where it acknowledges a right, when the conduct of the party complaining has led to the state of things that occasioned the applica-

tion; or in other words, it grants or refuses an injunction in many cases, not upon the ground of the right possessed by the parties but upon the ground of their conduct and dealing before they applied to the Court for an injunction to preserve and protect that right."

Binney's Case, 2 Bland, 96 (Md.).

Quotation from page 100.

"It is a well established rule in equity that if a party is guilty of laches or unreasonable delay in the enforcement of his rights, he thereby forfeits his claim to equitable relief. This rule is more especially applicable to cases where a party, being cognizant of his rights, does not take those steps to assert them which are open to him, but lies by and suffers other parties to incur expenses and enter into engagements and contracts of a burdensome character. The facts bearing on this part of the case as presented by the petitioners bring it very clearly within the operation of this salutary rule. The petitioners not only failed to use due and reasonable diligence in asserting their rights and seeking a remedy, but were guilty of gross laches. With a full knowledge of the vote of the town and the proceedings of the committee they permitted contracts to be made, and expenses to be incurred, not only by the committee, but by third parties who acted in good faith, relying on the credit of the town. They took no measures to enforce their rights until after the celebration had taken place, and innocent parties had come under liabilities which they would not have assumed, if the petitioners had reasonably sought redress for the impending grievance. To issue an injunction restraining the payment by the town of the bills thus incurred, would be manifestly most inequitable."

Tash *vs.* Adams, 10 Cush., 252 (Mass.).

"If the complainant has lain by and slept over his rights, has seen the defendant making contracts, and expending large sums of money in the prosecution of their work, and taken no steps to restrain them; it is

fatal to the application. It is a law of the Court, and dictates of sound reason, that where a party desires extraordinary aid he must be prompt in his application."

Scudder *vs.* Trenton Falls, 1 N. J. Eq., 694.

This rule has been laid down in numerous cases by this Court as well as by the courts of last resort in most of the States of the Union.

"The cases are many in which this defense has been invoked and considered. It is true that by reason of their differences of fact no one case becomes an exact precedent for another, yet a uniform principle pervades them all. They proceed on the assumption that the party to whom laches is imputed has knowledge of his rights and ample opportunity to establish them in the proper forum; that by reason of his delay the adverse party has good reason to believe that the alleged rights are worthless, or have been abandoned; and that because of the change in condition or relations during this period of delay it would be an injustice to the latter to permit him now to assert them." * * * (Reviewing many cases decided by this Court prior to 1891.) * * * "But it is unnecessary to multiply cases. They all proceed upon the theory that laches is not like limitations, a mere matter of time; but principally a question of the inequity of permitting the claim to be enforced—an inequity founded upon some change in the condition or relation of the property or the parties."

Galiher *vs.* Caldwell, 145 U. S., 368, quotation from 372 and 373.

In Speidel *vs.* Henrici, 120 U. S., 377, this Court said, speaking through Mr. Justice Gray:

"Independently of any statute of limitations, courts of equity uniformly decline to assist a person who has kept silent upon his rights and shows no excuse for his laches in asserting them. 'A court of equity,' said

> Lord Camden, 'has always refused its aid to stale demands, where the party slept upon his rights and acquiesced for a great length of time. Nothing can call forth this court into activity, but conscience, good faith and reasonable diligence; where these are wanting, the court is passive and does nothing. Laches and neglects are always discountenanced; and, therefore, from the beginning of this jurisdiction there was always a limitation to suits in this court."

In Galiher *vs.* Caldwell, 145 U. S., 368, 371, speaking through Mr. Justice Brewer, it was said:

> "The question of laches turns not simply upon the number of years which have elapsed between the accruing of her rights, whatever they were, and her asserting of them, but also upon the nature and evidence of these rights, the changes in value, and other circumstances occurring during the lapse of years. The cases are many in which this defense has been invoked and considered. It is true that by reason of their differences of fact no one case becomes an exact precedent for another, yet a uniform principle pervades them all.'"

In Hammond *vs.* Hopkins, 143 U. S., 224, 250, through Mr. Chief Justice Fuller, the Court said:

> "No rule of law is better settled than that a court of equity will not aid a party whose application is destitute of conscience, good faith and reasonable diligence, but will discourage stale demands for the peace of society, by refusing to interfere where there have been gross laches in prosecuting rights, or where long acquiescence in the assertion of adverse rights has occurred."

In Willard *vs.* Woods, 164 U. S., 502, 524, the Court said:

> "But the recognized doctrine of courts of equity to withhold relief from those who have delayed the assertion of their claims for an unreasonable length of time may be

applied in the discretion of the Court, even though laches are not pleaded or the bill demurred to" (citing a number of cases).

In the case of New York City *vs.* Pine, 185 U. S., page 98, this Court, through Mr. Justice Brewer, said:

"If the plaintiffs had intended to insist upon the strict legal rights (which, for the purposes of this case, we assume they possessed), they should have commenced at once and before the City had gone to expense, to restrain any work by it. It would be inequitable to permit them to carry on negotiations with a view to compensation until the City had gone to such great expense, and then failing to agree upon the compensation, fall back upon the alleged absolute right to prevent the work. If they had intended to rest upon such right and had commenced proceedings at once, the City might have concluded to abandon the proposed undertaking and seek its water supplies in some other direction. If this injunction is permitted to stand the City must pay whatever the plaintiffs see fit to demand, however extortionate that demand may be, or else abandon the work and lose the money it has expended. While we do not mean to intimate that the plaintiffs would make an extortionate demand, we do hold that equity will not place them in a position where they can enforce one.

"The time at which parties invoke the aid of a court of equity is often a significant factor in determining the extent of their rights. *Vigilantibus non dormientibus æquitas subvenit* is a maxim of equity. As said by Pomeroy in his work on Equity Jurisprudence, Vol. 1, Sec. 418, the principle embodied in this maxim 'operates throughout the entire remedial portion of equity jurisprudence, but rather as furnishing a most important rule controlling and restraining the courts in the administration of all kinds of relief, than as being the source of any particular and distinctive doctrines of the jurisprudence.'

> * * * The principle thus used as a practical rule controlling and restricting the award of reliefs is designed to promote diligence on the part of suitors."

The above case was one where the plaintiff had deferred bringing his suit for two years and in the meantime the defendant had been allowed to expend large sums of money in the exercise of a supposed right.

Applying the principles set forth in the foregoing authorities to the facts of this case, as we view it, they are conclusive of Georgia's action.

Had the State of Georgia undertaken to pursue her remedy when these works started and been able to maintain her contention that the operations of the defendant would irreparably injure her, then an injunction would have been of slight damage either to these defendants or to those indirectly interested, but its effect at the present time would not alone be the destruction of an investment of several million dollars so far as this defendant is concerned, but would fall more heavily still upon the very large communities wholly dependent upon this industry; and we submit to the Court that the apparent results of the granting of an injunction in this cause show conclusively the wisdom and justice of the rule of equity so often affirmed by this Court that a party will not be allowed to stand by, and by his silence acquiesce in the exercise of a supposed right, then when that supposed right has been exercised and large sums of money have been expended and the parties placed in a different attitude, undertake to exercise that right to the detriment of others.

In addition to the acts of the State of Georgia above set out, which should estop her from obtaining the relief prayed in this case, it is submitted that, in so far as she is seeking that relief as *parens patriæ* trustee and guardian for her citizens, she is estopped by the contribution of those citizens to the nuisance complained of. The record in this case

demonstrates the fact that the citizens of the State of Georgia for many miles have cut the timber from their property; have burned that timber into charcoal and have delivered the charcoal at the furnace of these defendants and their predecessors in title and in operation for the purpose of aiding in the smelting operations; and to that extent they contributed to the condition complained of. Certainly, if the doctrine of estoppel would apply to a party suing in his own right it would apply on account of the conduct of the person in whose behalf he sues when suit is brought for the benefit of persons other than the parties to the action.

It appears from the record in this case, beyond all question, that the present methods employed by the Tennessee Copper Company were brought about by the insistence of the State of Georgia and by virtue of the stipulation under which its bill against the same defendants filed in this Court at the October Term, 1903, was dismissed. It is shown by the bill in this cause, by the stipulation and by all of the proof on that subject that it was believed by the parties to that cause that the then existing methods were the source of complaint. With that belief and on the insistence of the State of Georgia, the defendants abandoned the open heap method and began the process of pyrite smelting. We submit that under the foregoing authorities, the State of Georgia will now be denied the right to come into this Court and seek injunctive relief against a condition the creation of which grows out of its own insistence, negotiations and contract.

POINT IV.

The granting or withholding of an injunction is a matter for the exercise of the sound discretion of the Court under all the facts and circumstances surrounding each particular case.

It is submitted that the copper industry is a lawful business and that any lawful business has the right to exist somewhere. It is further submitted that the proof in this case demonstrates beyond doubt that less injury is being inflicted or could be done in the location of the Ducktown copper operations than could be done at any other point. The proof shows beyond question that the ore mined and treated at Ducktown is not susceptible of being transported to any other point. The proof shows that the character of country is such as that the least injury could be done by operating at this point. It is shown by the proof that this is a mountainous country, that the timber is poor and unmerchantable, that the soil is sterile and not adapted to agricultural pursuits; that the timber has already been cleared from the lands for miles in every direction. It is shown further that the copper mining industry is of more importance to the adjacent and surrounding country than all of the other industries of that section combined. The two companies employ more than 3,000 people; they support a population conservatively estimated at 15,000 people, including the towns of McCays, Hiwassee, Isabella and many smaller villages and hamlets scattered throughout the immediate neighborhood of the mines and smelters; in addition their commercial influence is felt throughout Eastern

Tennessee, Western North Carolina and Northern Georgia. It is shown by the record in the affidavit of M. J. Webb that the people of Northern Georgia for many miles are either directly or indirectly interested in these copper operations. It is shown by his affidavit and supported by the proof in this cause that merchants are conducting business many miles from Ducktown on the strength of the credit conditions due to the operation of the Ducktown mines, that money is circulated throughout these mountains by reason of the fact that the sons and relatives of the families in the mountains are working in the mines and supporting their families and their relatives in the mountains. It is shown that the people realizing the advantage of the high prices prevailing in the Ducktown District have abandoned their farming lands, or have given up their meagre agricultural pursuits and have moved themselves and their families into the Ducktown mining district. The payroll of these defendants is shown to be approximately $1,000,000 per annum, all of which enures to the benefit of the immediate neighborhood. The proof shows that the supplies purchased by these mining companies exceed $1,000,000 per annum, that these supplies consist of wood, timber, various products of the immediate country and fuel, such as coal and coke which comes from the coal mining regions near by.

We submit that in considering the question of the granting of the injunction prayed, there should be taken into consideration not only the effect of the injunction upon these defendants, but also the effect which the granting of the injunction will have upon the communities interested, and we submit that from all of the proof in this cause, the granting of the injunction will be far more disastrous, not only to the defendants, but to the entire community supported by them and also to the surrounding country, than would be the withholding of the injunction.

That an injunction in a case of this kind is never a matter of absolute right but one of judicial dis-

cretion is, as we view it, the well-settled law of courts of equity.

A case peculiarly in point is that of Madison *vs.* Copper Companies, 113 Tennessee, 331. The Court said (pp. 358-360):

> "But there is another principle which is of controlling influence in this department of law, and in the light of which the foregoing principle must be weighed and applied. This is that the granting of an injunction is not a matter of absolute right, but rests in the sound discretion of the Court to be determined on a consideration of all of the special circumstances of each case, and the situation and surroundings of the parties, with a view to effect the ends of justice."
>
> "A judgment for damages in this class of cases is a matter of absolute right where the injury is shown. A decree for an injunction is a matter of sound legal discretion, to be granted or withheld as that discretion shall dictate, after a full and careful consideration of every element appertaining to the injury."
>
> "These propositions will be found to be substantially confirmed and enforced in the following authorities:
>
> "In Clack *vs.* White (a nuisance case) it is said: 'It is also admitted in defendant's answer that the way was open and that he afterwards obtsructed and closed it. So that both the legal title to the way and its obstruction by defendant appear in the present record. But it does not follow as a corrollary that therefore the injunction will lie. The special injunction is not a writ of right, but it rests in the sound discretion of the Court; and hence Mr. Story says: "No injunction will be granted whenever it will operate oppressively or inequitably, or contrary to the real justice of the case"' (2 Story Eq. Jur., Sec. 959; 2 Swan., 545).
>
> "In Wood on Nuisances (3 Ed.), p. 1182, it is said: 'The true intent of a court of equity being to do justice between parties it will not issue a restraining order except where the right of the parties demand it, and, in determining this question, all the circum-

stances of location, the effect upon the defendant's business and interests will be considered; and, while the usefulness of the business or its performance, magnitude or extent will not in all cases prevent interference, yet, if the injury on the one hand is small and fairly compensable in damages, and the loss to the other party would be large and disastrous, an injunction will be refused and the party left to his legal remedy.'"

The Court further said on pages 360 and 361:

"And so, too, the Court is bound to compare the consequences. If the fact of an actionable nuisance is clearly established then the Court is bound to consider whether a greater injury will not be done by granting an injunction, and thus destroying a citizen's property and taking away from him his means of livelihood, than will result from a refusal, and leaving the injured party to his ordinary legal remedy, and if, on thus contrasting consequences, it appears doubtful whether greater injury will not be done by granting than by withholding the injunction, it is the duty of the Court to decline to interfere (Hilton *vs.* Earl of Granville, 1 Cr. & Ph., 283). The duty of granting or refusing an injunction is a matter resting in sound discretion. It should never be granted when it will operate oppressively or contrary to the real justice of the case, or where it is not the fit or appropriate method of redress under all the circumstances of the case, or when it will or may work fatal injury to the person enjoined (Jones *vs.* City of Newark, 11 N. J. Eq., 452; 34 N. J. Eq., 469. See also Charties's Block Coal Co. *vs.* Mellem (Pa.), 25 Atl., 597; 18 L. R. A., 702; 34 Am. St. Rep., 64; Fesler *vs.* Brayton (Ind.), 44 N. E., 37; 32 L. R. A., 578.)"

The Court in the above case reviewed the authorities in a very elaborate opinion, and we do not think it necessary to refer to the same authorities here.

It will be observed that in the Madison case, above

referred to, some injury to the property of the plaintiff was undoubtedly being done. *That case arose and the facts shown therein were developed at a time prior to the installation of the present method of green ore smelting;* and even then when damage was being done to the property of individuals, the Court held that the granting of the injunction would operate so oppressively and would produce so much more damage upon one side than its refusal would upon the other, that the parties would be left to pursue their remedy at law.

In Richard's Appeal, 57 Pa. St., 105, the Court said:

> "An error seems somewhat prevalent in parts at least of this Commonwealth in regard to proceeding in equity to redress a commission of a nuisance. It seems to be supposed that, as at law, whenever a case is made out of wrongful acts on the one side and consequent injury on the other, a decree to restrain the act complained of must as certainly follow as a judgment would follow a verdict in a common law court. This is a mistake. It is elementary law that in equity a decree is never of right as a judgment at law is, but of grace. Hence the Chancellor will consider whether he will not do the greater injury by enjoining than would result from refusing, and leaving the party to his redress at the hands of a Court and jury. If in conscience the injury should not appear, he should refuse the injunction" (Hilton *vs.* Earl of Granville, 1 Craig Ph. Ch. R., 294).

In Hilton *vs.* Earl of Granville it appeared that the mining operations of the defendants, in which they had several hundred thousand dollars invested, were threatening to undermine and destroy plaintiff's dwelling house, but as the damage which might result to him if he suffered the injury was susceptible of approximate compensation, and as the stopping of the operations by the injunction would entail upon the defendants irreparable injury the injunction was refused.

The courts of equity will refuse to grant an injunction when it appears that greater injury and inconvenience will be caused to the defendant by granting the injunction than will be caused to the complainant by refusing it.

The Courts will require a very strong case for the granting of an injunction which will cause more injury than it will remedy and it may be said, as a general rule, that an injunction will not be granted where it will be productive of greater injury than will result from a refusal of it. This rule is especially applicable when the party applying for an injunction has by his own laches made it impossible to grant the injunction without inflicting serious injury on the party so to be enjoined.

16 Am. & Eng. Ency. of Law, 2d ed., 363, 364; Spelling on Extraordinary Relief, Secs. 23, 372; Edwards *vs.* Allouez Mining Co., 38 Michigan, 46; Clifton *v.* Dye, 87 Alabama, 468; Richards Appeal, 57 Pa. St., 114; Hall *vs.* Reed, 39 Michigan, 46; Campbell *vs.* Seaman, 63 N. Y., 568.

It would be useless to multiply authorities upon this question. It is undoubtedly the well-settled rule of courts of equity, especially applicable to these preliminary applications.

Perhaps the latest and most important cases having direct bearing upon the questions here presented are the cases of Mountain Copper Co. (Limited) *vs.* United States C. C. A., lately decided by the U. S. Circuit Court of Appeals for the 9th Circuit, and the case of John Godfrey *et al.*, *vs.* American Smelting & Refining Company, Utah Consolidated Mining Co., U. S. Smelting Co. and Bingham Copper & Gold Mining Co., recently decided in the U. S. Circuit Court for the District of Utah.

In the first of these cases the facts are somewhat

similar to those alleged by the complainant in this case. The Circuit Court granted the injunction upon the hearing on the merits. The case was taken to the Court of Appeals and that Court reversed the lower Court and dismissed the bill. That Court said:

> "Indeed that the comparative convenience or inconvenience of the parties from the granting or withholding of the injunction sought should be considered, and that none should be granted whenever it would operate oppressively or inequitably or contrary to the real justice of the case is a well established doctrine and we need hardly multiply authorities to that effect."

It was claimed by plaintiff and was found by the Court in that case that the gases from the plant of the Mountain Copper Co. (Limited) were producing damage to timber lands belonging to the Government (that company had not yet used a high stack); as in the present case, it was found that large interests were involved; that towns had been builded and hundreds of people were dependent upon the copper works for their employment and livelihood. The Court, weighing the convenience of the parties and the injury that would be done by the granting of the injunction compared with that to be done by refusing, and considering that the damages were susceptible of accurate estimation, exercising a sound discretion, refused the injunction.

It developed in the Mountain Copper Company case that one of the demands of the Government upon that company was that tall stacks should be erected in order that the fumes would be discharged at a point high in the atmosphere and, becoming commingled with the air, would become diffused and diluted so that before reaching vegetation they would have become innocuous. In that case there also arose the question of the feasibility of condensing the fumes into sulphuric acid. On

that question the Court held that, irrespective of the scientific problem involved, it was not shown that the commercial conditions were such as to permit disposition of the acid when so manufactured.

Mountain Copper Co., Ltd., *vs.* United States—C. C. A.

In the case of James Godfrey *et al. vs.* American Smelting & Refining Co. *et al.*, above mentioned, the Circuit Judge in his opinion finds that the region affected by the operations complained of was a rich, fertile, agricultural region devoted largely to dairying and fruit raising. The bill had been filed by more than 400 of the citizens of that district. The contention was made that shade trees and other ornamental foliage was being injured by the operations of the defendants. It was also contended that the fumes contained *arsenic* and other *poisonous* ingredients which were deleterious not only to vegetation but to the health of the citizens and their live stock. (There is no arsenic in the fumes of Ducktown District.) It was shown that aside from the copper values of the ores, the ores of the defendants carried certain quantities of gold and silver, making a valuable bi-product; and it was not shown, as we understand the proof in the case, that the ores of the mines involved could not be treated at some point other than the location of the smelter plants where less injury might be done. The ores of those mines being of higher grade and consequently of greater value than the usual ores, and of greater values than ores of the Ducktown district, would bear the expense of transportation to other points for smelting.

Sulphur Acid.

We submit that it is demonstrated by the record in this case that it has been neither a scientific nor

commercial possibility to produce sulphuric acid from a mono-sulphide ore. The sulphuric acid now used in the United States is produced from ore shipped to the United States from Spain. It is also demonstrated by the proof in this record that the defendants in this case have by every possible effort tried to solve the problem of the production of sulphuric acid from mono-sulphide ores and that they have exercised and are exercising every reasonable degree of diligence in their endeavors to satisfy the complaints of injury from their operation.

In order to bring their operations up to the highest known state of the art and with the knowledge and consent and upon the insistence of the State of Georgia, the open heap method of roasting was abandoned and direct smelting was resorted to. In connection with the method of treatment the tall stack, with its long flue and dust chambers, was erected by defendant Tennessee Copper Company. The proof shows that aside from the great expense incident to the erection and construction of this stack and flue, that there was a direct financial loss to the defendant Tennessee Copper Company, due to the fact that immediately upon the change of process the capacity of the furnaces was reduced from twelve hundred tons per day to eight hundred tons per day, with the consequent reduction of revenue income, and with no offsetting reduction of expense.

It is further shown by the affidavit from Mr. Freeland that defendant Ducktown Sulphur, Copper and Iron Company at one time spent more than $200,000 in an effort to make sulphuric acid, and that the defendant is still spending money and experimenting in its effort to accomplish this end. It is shown by the affidavit of Mr. Susmann and Mr. Channing that the defendant Tennessee Copper Company, with its hope to solve this problem, have expended far in excess of $100,000 on the present plant now in course of erection, and that this defendant has further contracted for an additional ex-

penditure of more than $400,000 on its sulphuric acid plant, and that this plant is still a huge experiment.

We submit to the Court that in the light of the diligence used by these defendants and in view of the fact that they have expended and are expending these large sums of money in an effort to eliminate the sulphuric acid from the fumes, that in no event should an injunction issue until they shall have had ample opportunity by diligent effort to demonstrate the feasability or the failure of their sulphuric acid plants.

The effect of an injunction upon the efforts of the defendants to solve the sulphuric acid problem would be to deprive them of the means of accomplishing the thing which the State of Georgia is demanding that they shall accomplish. If at the present stage of their experimental and development work they shall be prevented from continuing their operations, the immediate and direct result would be the total disorganization of their forces, the closing of their plants, and the necessary immediate abandonment of that part of their work looking to the solution of this problem. It may be argued that the question of the feasibility of sulphuric acid production from mono-sulphide ores could as well be determined by the chemical experiments in a laboratory. On this point we desire to call the Court's attention to the fact that, so far as laboratory experiments are concerned, defendants have such assurances that the sulphuric acid problem may be solved practically that, in continuance of those laboratory experiments, they feel warranted in making the vast outlays above mentioned. It is shown by the affidavit of Mr. Freeland, Mr. Channing and Dr. Ricketts that the production of sulphuric acid has not been demonstrated and could not be demonstrated by laboratory tests, that the question must be settled by the actual doing of the thing sought to be done, and that, while the theories may appear from a chemist's point of view to

be infallible, yet to prove those theories there must be actual demonstration of the fact.

And in conclusion of this subject, we think it not improper to say that while apparently the interests at stake in the present litigation seem to be simply the investments of the defendants to this suit and the welfare of their employees and the communities dependent upon them, on closer investigation we feel warranted in asserting that upon the results of this litigation depend the welfare and future, not only of one of the greatest American industries, but one of the greatest industries of the world with its varied, allied, dependent manufacturing interests and its hundreds of thousands of employees, and with the electric advancement of the civilized world at stake. In commenting upon the indispensability of the industry, we beg to quote the Copper Hand Book for 1905, at page 65, as follows:

> "The uses of copper are many, and great industries are dependent upon this metal, which affords direct employment to some hundreds of thousands of persons, mostly skilled workmen, and annually adds something like five hundreds of millions of dollars to the wealth of the world. The Stone Ages of humanity were followed by the Bronze Age, in which copper and tin were the only metals used, unless the wearing of a few gold and silver trinkets could be said to establish the use of those metals. The Age of Iron followed that of Bronze, and the Steel Age of the latter half of the Nineteenth Century is but a later and higher development of the Iron Age, just as the polished stone weapons of the Neolithic Age of ethnologists indicate a period of adaptation and improvement upon the cruder weapons and implements of an earlier day. While iron and steel are not only holding their own, but gaining ground in phenomenal strides, another metal has arisen to claim at least a portion of the honors of the Twentieth Century civilization, and copper is the foundation of the Electric Age, just as it was the fundamental metal in the Age of Bronze, some milleniums ago."

The United States is to-day the chief producer of the copper of the world. More than two-thirds of the world's output in 1902 was furnished by the United States. The production of copper mines of the world for that year shows that in long tons there were produced in the world 542,470 tons, of which North America produced 349,870 long tons, the United States producing 294,600 tons (see special report to the Census Office, Mines and Quarries, 1902, p. 491). It is shown by table 33, at page 492, that the production of copper in the nineteenth century has increased from 91,000 during the decade of 1800 to 1810 to 3,708,900 long tons in the decade from 1890–1900.

With respect to the number of operations of copper companies in the United States, we have been able to obtain no later information than that outlined in the census reports of 1902, which show that in that year there were 144 copper operators in the United States. Of these 100 were incorporated companies, 25 firms, &c., and 19 individuals. The total ore produced, gross value, amounted to $77,882,166, of which $21,000,000 was expended in wages, more than $11,000,000 expended in supplies and material (see special report to Census Office, 1902, Mines and Quarries, p. 470).

In an article by Chas. Kirchhoff in Department of the Interior, United States Geological Survey, mineral resources of the United States, calendar year 1905, he fixes the total copper production of the United States for the year 1905 at 402,634 long tons: So great has been the increased demand for copper that in the year 1905 its value by comparison had increased in the United States until among all the metals produced copper stands second. The value of pig iron production for 1905 was approximately $382,000,000; silver, $34,000,000; gold, $88,000,000; copper, $140,000,000; lead, $28,000,000, zinc, $24,000,000 (mineral product of the United States, calendar years 1896 to 1905, Geological Survey).

Mr. Walter Harvey Weed in an article on the

copper production of the United States (Bulletin 260, U. S. Geological Survey, p. 211), fixes the value of the production of copper in the United States for 1904 at $95,000,000, and shows that it far exceeds gold, and it is surpassed in value only by the production of coal and iron: that of the production of the United States for 1903 of the total of 699,145,848 lbs. 466,097,000 lbs. was produced from sulphide ores, or approximately 70 per cent., so that of the production of $139,700,000 in 1905, based on the figures of Mr. Weed for 1904, the value of copper produced from the sulphide ores was $97,790,000. Aside from Lake Superior and Arizona deposits, practically all the copper ores of the United States are sulphides, and the most common form of sulphide copper ore the world over is monosulphide of the character of ore in the veins of Ducktown. There are practically no pyrite ores in the United States, with the exception of one or two comparatively small ore bodies, the greatest of which is in the Shasta District of California (see Bulletin U. S. Geological Survey, No. 260, pp. 211 to 216).

In addition to the copper values in the copper sulphide ores, it may be well to state that during the year 1905 there were 237,116 ounces of gold produced from copper ores and 15,768,307 ounces of silver produced from copper ores. This gold production from copper ores is of the value of about $5,000,000, while the silver production from the copper ores is of the value of about $9,000,000 (see Bulletin 285, U. S. Geological Survey, 1905, p. 95). Gold and silver produced from copper ores are derived solely from sulphide ores.

The entire gold and silver production of the United States for the year 1905 is shown by "Mineral Products of the United States" (United States Geological Survey) to be: gold, $88,180,711; silver, $34,221,972, so that the sulphide copper ores of the United States produced as a bi-product approximately twenty-eight per cent. of all of the silver produced

and appproximately seven per cent. of all of the gold produced.

So that the value of the sulphide copper ores of the United States during the year 1905 in copper, gold and silver amounted to approximately $111,790,000.

The copper industry is in itself a lawful business, and we submit that any lawful business conducted in accord with the highest known state of art has a right to exist somewhere. We submit that it is conclusively shown by the record in this case that the Ducktown Copper industry cannot be pursued except in the Ducktown District, because of the fact that the ores of that district are of such low grade as that they will not bear the expense of shipment to any other point for treatment. We submit further that it is demonstrated beyond question by this record that the location of this industry at that point is where it could do less injury than could possibly be done at any other location. The surrounding country is of low commercial value, the soil is not an agricultural soil, it is not in a farming district, and the timber interests are comparatively insignificant.

If copper cannot be smelted in these desolate mountain districts where is there a place that it can be smelted in this great copper producing country?

In the light of the conditions which are shown by the record in this cause to exist with respect to the copper operations complained of by the bill, and in the light of the principles of equity controlling in such cases, we confidently maintain that the plaintiff has not made out such a case, either by the allegations of its bill or by the proof submitted in this record on those allegations, as to invoke the favorable consideration of this Court. We believe that upon a review of the facts in this record the Court

must say substantially as it said in the case of Missouri *vs.* Illinois, that plaintiff's proof falls so far below the allegations of its bill that it has not brought its case within the principles attempted to be invoked by the bill, and that the bill should be dismissed.

Respectfully submitted,

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